GALTEE MOUNTAINS PATH STUDY

Final Report

South Tipperary Development Company and the Galtee Steering Group acknowledge the funding received from Rural Recreation Division of The Department of Environment, Community and Local Government.

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Summary

The Galtee Mountains are a popular hillwalking area and are under increasing recreational pressure. A comprehensive survey of the high level paths in these mountains has revealed widespread damage caused by walkers. Although the overall level of damage is not as acute as some mountain areas in Ireland, the survey indicates that without some form of intervention, the damage will increase and could potentially reach extreme levels around Galtymore.

This study has considered the range of options available to minimise the impact of recreation and concludes that early intervention using sensitive path restoration techniques is the recommended option. Coupled with path repairs there is an opportunity to restore areas of damaged and exposed peat habitat, which could contribute to enhancing the status of the European designated Special Area of Conservation (SAC).

The Galtees provide an opportunity to develop skills in sensitive path management in Ireland, potentially hosting a training project that will help to restore the damage caused through recreation and build capacity that could be transferred to other parts of the country.

This study highlights the risks to the environment posed by motorised vehicles using the SAC (for purposes not associated with land management) and recommends that agencies come together to exclude quads and scramblers from the high ground. The potential for damage by inappropriate development or promotion of the mountains as a tourism destination are also identified as significant risks.

Investment of c€500,000 – €650,000 over three to five years is required to reverse the impacts of recreation and a long term commitment to maintenance, of around €20,000 per annum is an integral part of any actions to manage recreation.

CONTENTS

1 BACKGROUND TO THE STUDY

This study was commissioned by South Tipperary Development Company and was part funded by... The study was awarded by competitive tender, and details of the brief are included in Section 2 for reference purposes.

Note on spellings: throughout this report 'the Galtees' and 'Galtee Mountains' are used interchangeably to refer to the whole mountain range from Temple Hill in the west to Farbreaga in the east. 'Galtymore' has been used for the highest peak. It should be noted that Ordnance Survey Ireland maps use the spelling of Galty Mountains, and Galtymor is used in some online references.

1.1 ACKNOWLEDGEMENTS

Although it is not practical to name everyone who assisted with this project there are a number of people whose involvement has greatly enhanced the study and their contributions are greatly appreciated:

- Jimmy Barry and Matt Joy for giving generously of their time, knowledge and passion for the Galtees;
- Maureen O'Brien for helping to identify the key routes included in the survey;
- Bridget King for helping to explore land management issues;
- Helen Lawless for unfailing support for the project, and endless enthusiasm and energy;
- John Egan for support and guidance throughout the project;
- Landowners and farmers in the Galtees for attending meetings, responding to enquiries and providing knowledge and opinions;
- Walkers who attended meetings and responded to requests for information.

1.2 RECREATIONAL USE OF THE GALTEE MOUNTAINS

The Galtees are known as the highest inland mountain range in Ireland and Galtymore is one of 14 mountains above 3000ft altitude in Ireland. This makes the range attractive to walkers from across Ireland but there are a number of locally based walking clubs that use the Galtees as their 'home patch'.

The main attraction (in terms of visitor pressure) on the mountain range is the summit of Galtymore. Two of the most popular approaches to Galtymore are the Black Road on the south side, and Cush on the north. There are no known records of visitor numbers for either routes but anecdotally it is thought that there are tens of thousands of visitors each year who climb Galtymore. The Black Road approach is claimed to be the most popular and there are a number of large charity events that use this route annually – these include walkers with little or no previous experience of walking in Ireland's mountains.

The 'Galtee Crossing' is another popular activity and there are a number of organised events (smaller in scale than the charity events on Galtymore) that provide return transport from around the mountain range. There are also a number of walking festivals centred around the Galtees that take place annually.

1.3 LAND USE

The upland areas of the Galtees are used for grazing with the majority of land being held as commonages, which are privately owned through shareholdings. Some commonages have a large number of shareholders (over 30 in some cases); not all shareholders have active farming interests and some shareholders have shares in more than one commonage, potentially covering a large swathe of the mountains. There are also some parts of the high ground that are owned by individuals – the parcels of land and ownership details are complex, but can be accessed via the Land Registry website (www.landdirect.ie). Some of the land parcels are registered with 'turbary burdens' – meaning that there are turf-cutting rights associated with the land – notably on the northern side of Galtymore.

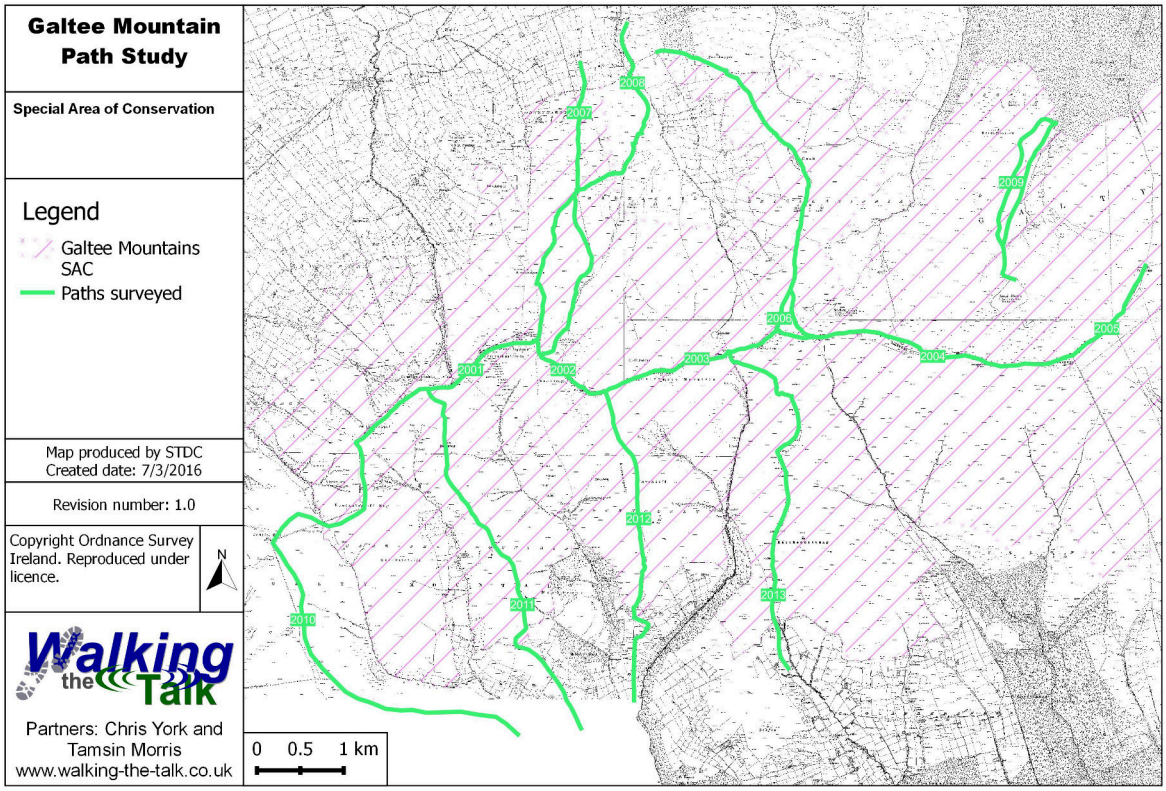
The lower ground surrounding the Galtee Mountains is a mixture of farming and forestry. Coillte has extensive land holdings around the Galtees and represents a key land manager with regard to public access.

On the high ground, there is some controlled burning of heather but otherwise minimal intervention except for grazing. Sheep are on the hill for most of the year, allowed to roam freely and there are no fences between the commonages. There are small numbers of cattle, but they tend to remain on the lower ground.

Peat was cut for fuel in the past but there is no sign of active management of the peat banks. There are also some drains that have been cut in some areas, although they do not appear to affect recreational routes.

1.4 CONSERVATION STATUS OF THE GALTEE MOUNTAINS

The high ground of the mountain range forms a Special Area of Conservation under the EU Habitats Directive and is listed as the 'Galtee Mountains SAC'. The site was designated due to the presence of two Annex I priority habitats (active blanket bog and species-rich Nardus grassland) and four other Annex I habitats (European dry heath, alpine and boreal heath and both calcareous and siliceous rocky slopes with cliff vegetation).



1.5 PRINCIPLES AND GUIDANCE FOR THIS STUDY

Walking-the-Talk has based the survey and recommendations on the principles of the Upland Path Advisory Group, including the Upland Pathwork Manual (UPAG, revised 2015) and recognises the value of 'Helping The Hills' in setting the context for this study. All references to repair and construction techniques within this report, lie firmly within the context of the Upland Pathwork Manual and should not be reinterpreted through the perspective of conventional construction industry or civil engineering standards. Although it may appear counter-intuitive, strict adherence to prescribed dimensions and quantities is very likely to result in a lower quality outcome than following the principles and techniques advocated by the Upland Paths Advisory Group – these require experienced people to make informed decisions that are appropriate to the local conditions.

The revised Upland Pathwork Manual is available at:

http://www.snh.org.uk/pdfs/publications/heritagemanagement/UplandPathwork.pdf

Helping The Hills Principles

Communications

1. Management of upland paths should be informed by consultation with all stakeholders, including landowners, recreational users, relevant statutory bodies and the local community.

2. When path repair work is in progress, temporary signage and other communications should explain that the work is being carried out to protect the natural environment.

3. Information on the responsible and sustainable use of upland paths should be available to all users.

Ethos

4. All those who go into the uplands, whether individually or as part of a group, have a responsibility to minimise the impact of their activities on the natural environment.

5. Upland pathwork should be carried out within a coherent and agreed management framework, which establishes the rationale for works, their relative importance and includes a commitment to long-term maintenance.

6. Path repair or construction in the uplands should only be carried out when this is necessary to protect the environment.

7. Any work carried out should strive for minimum impact on the essentially wild character of the landscape.

8. The more remote the path, the more stringently the criteria for path repairs should be applied. This will be a matter of judgment, but in general, the more remote or wild the location, the less acceptable an obviously engineered path will be.

9. Those involved in the design, implementation and supervision of upland pathwork should preferably be technically competent and suitably experienced.

10. Private landowners have to be involved in decision-making regarding erosion management on their land; however they should not be expected to bear the cost of repairing paths that have been eroded through recreational use.

11. A sustained multi-annual commitment of resources to upland path management will be sought, so that small scale continuous maintenance can become the norm, with the aim of preventing the need for major repairs.

Practice

12. Pathwork should be of the highest standard of design and implementation, normally using locally sourced materials in harmony with the site. The best or most sensitive solution and quality of work should always be sought, not necessarily the cheapest, and this should be reflected in the public procurement process.

13. Good environmental practice is paramount. Techniques used should protect existing vegetation and cultural remains, and the site should be left in as natural a state as is practicable. This is particularly important in areas designated for nature conservation or landscape value.

14. The addition of intrusive features such as fences, waymarkers, inappropriate signage and cairns should be avoided.

15. Machines can provide valuable assistance in upland pathwork; however they must be used sensitively and appropriately by a skilled operator. The use of machines should be in accordance with all other principles.

16. It should be an objective in any upland path work to train and upskill local people with a view to establishing a long term skills and employment base, although it may be necessary to bring in workers with relevant expertise from outside the area.

2 METHODS

The tender brief required the following actions to be completed:

1. Engage with stakeholders through working with the Rural Recreation Officer and representatives from the Galtee Steering Group.

2. Meet with interested parties to gather local information and trends. This will involve conducting meetings with e.g. private landowners, recreational users, tourism interests, community groups, the Galtee Steering Group, National Parks & Wildlife Service and Coillte, etc.

3. To record the current condition of the network of paths used by hillwalkers on the Galtee Mountains. The study will involve mapping the path network (approximately 50km of paths), recording locations using a hand-held GPS device, taking photographs of the paths and making basic measurements such as path width and depth as well as factors such as trample width, drainage, dynamism, erosion and work priority. Special attention will be given to paths between Galtymore and Galtybeg as well as the main access routes to Galtymore via Kings Yard, the Black Road and Cush including the Cush Loop

4. To identify path sections where erosion is a concern and make recommendations for repair and maintenance. The study should include recommendations for what work is required to repair eroded path sections, indicative costs involved, as well as advice on the techniques and materials to be used.

5. To make recommendations for the future management of recreation activity in the area so as to ensure sustainable use of the area's natural resources. These recommendations may cover factors such as the location and size of car-parks, promotion of the area, provision of information to recreational users, the management of large events and structures to enable delivery of the recommendations in the study. These structures should be detailed in terms of financial and funding requirements, human resource requirements and planning and statutory requirements.

6. To provide a database report of study findings and written recommendations. The study should produce a written report of the survey findings recording path condition, supported by maps and photographs and recommendations for the future management of recreation in the area with indicative costings. The report should also describe the process for the path audit so as to provide a template for other upland areas.

2.1 MAPPING AND RECORDING PATHS

Walking-the-Talk undertook a field survey of Galtee Mountains paths to assess their extent and current condition. The method is based on the standard Amber Survey technique described in the Upland Path Management Manual (UPAG, 2003).

> *"An Amber survey is particularly useful when surveying a number of paths. It is about current and projected path condition and may provide outline costs. It provides information about path management requirements, the costs of their implementation and the condition and physical setting of paths. It can also be used as baseline information for monitoring change over time. Information from an Amber survey can be used to support funding applications and also to monitor the effectiveness of path management." Source: UPAG (2003)*

The technique is described in detail in the Manual, available at: www.snh.org.uk/uplandpathmanagement/2.4.shtml

Each of the routes was divided into sections to allow them to be assessed and they were mapped with a GPS (accuracy 3-5m during the field survey). Each section was also photographed in detail with the images being 'geotagged' for location.

Walking-the-Talk has developed a proprietary database (using Microsoft Access) which is linked to a Geographical Information System (GIS) to allow field data to be captured and analysed. The outputs from the database are included as Appendix 1, with the detailed records and up to four representative images for each section.

2.2 CONSULTATIONS

Land ownership data was obtained from the Irish Land Registry by the Rural Recreation Officer and 122 letters were sent to landowners / shareholders within the area of the study inviting them to one of two evening sessions. Local contact details for Walking-the-Talk were made available to all landowners / shareholders, and they were invited to provide their views on the project and identify any issues that they may have regarding public access on the land they manage. Three landowners / shareholders made contact and their views were discussed on a one-to-one basis.

Two evening meetings were held for landowners, in Burncourt and Bansha, to provide information on the project and to gather the views of farmers on recreation.

A walkers' consultation event was held at the STDC offices in Cahir, which was attended by representatives of local walking clubs. Participants were given a structured exercise looking at a range of routes within the Galtees, with an objective of prioritising between routes and suggesting potential solutions that they thought would be appropriate. This was also an opportunity to present some of the initial findings of the fieldwork phase and discuss how some erosion problems could be addressed.

In addition to the events, a dedicated email address was set up and widely promoted, to facilitate feedback from interested parties.

Experienced local walkers were also consulted on a one-to-one basis to gather information about the main routes, their relative popularity and any issues regarding access and erosion. These discussions were invaluable in planning the field survey.

Discussions were held with the National Parks and Wildlife Service (NPWS) both at a local and national level. These discussions focussed on issues related to the use of motorised vehicles, and the management of the SAC.

3 OUTCOMES OF THE LANDOWNER / SHAREHOLDER AND PUBLIC CONSULTATIONS

3.1 LANDOWNER CONSULTATIONS

The turnout to the landowner meeting was low – five at Burncourt and six at Bansha. However, those present provided useful feedback on land management issues and input to the study. There was general consensus at both meetings that walkers are not having a significant impact on the Galtees and that the biggest problem comes from quad bikes and scramblers accessing the upland areas.

Discussion ranged around tourism promotion and development in the area, provision of facilities for walkers and public liability. Car parking was seen as a problem, and this was mainly down to lack of thought by people parking on narrow roads and blocking entrances. Farming issues raised included potential loss of income by excluding eroded areas, and the management of fires on the open hill (farmers are being held responsible for fires). There was concern that measures to prevent quad bikes accessing the Galtees could impact on legitimate land management operations.

In terms of potential repairs to paths there was some discomfort at the possibility of excavators being let loose on the upland areas but in general small scale repairs were not seen as a problem. There was some support for encouraging use of low ground rather than the mountain tops, including providing better car parking at lower levels.

One-to-one discussions were also held with other farmers who had been unable to attend the meetings. There were no additional issues that were raised of relevance to the study.

3.2 WALKER CONSULTATION

Representatives of six local walking groups attended the meeting and participated in an exercise to attempt to prioritise where damage needs to be addressed. With the time available it was not possible for everyone to consider all routes on the Galtees but it was clear from the feedback that Galtymore – Galtybeg is seen as a priority for action by everyone who attended. There was recognition of the recreational pressure along the Black Road and up to the Galtymore col but no immediate consensus on how that could be tackled.

In an open discussion a number of issues were raised:

- The need to raise public awareness of damage to the hills and to change the perception of ‘goals’ (i.e. reaching the summit)
- A desire to ‘unpromote’ routes and help to set appropriate expectations of visitors
- To look for alternative low-level routes as a means of reducing pressure on sensitive areas
- For any repair work to be sensitive to the surroundings and to investigate the possibility of restoring the damaged bogs
- The need for secure parking

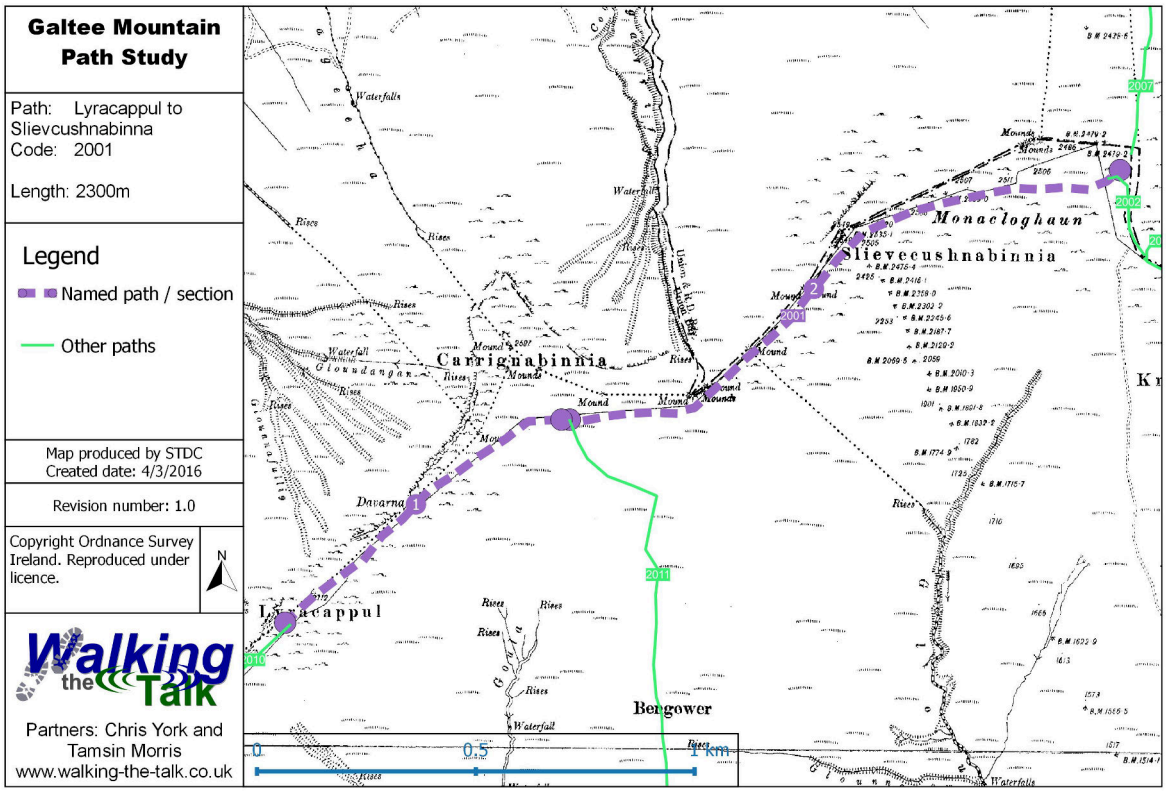
A walking club that was unable to attend the meeting sent a contribution by email, which took a similar position to those who attended and also suggested the potential need for walkers to make a contribution of time or money to help protect the Galtees.

Mountaineering Ireland distributed a note of the outcomes of the meeting and published advice, based on the discussions, in its publication Mountain Log.

4 PATH SURVEY RESULTS

The routes have been named using features on the Ordnance Survey map and have been split between major summits along the ridge from east to west starting at Lyracappul. The approach routes are presented on the northern side then the southern side.

4.1 LYRACAPPUL TO SLIEVECUSHNABINNA



4.1.1 ROUTE DESCRIPTION

The route mostly follows the boundary wall/dyke, which is probably used as a navigational aid, and there are places where people have crossed the wall to avoid wet areas. Beyond the summit of Slievecushnabinnia two routes exist at a sharp corner of the wall – a direct route via a large cairn or following the wall itself. It is likely that the wall is used in very poor visibility conditions.

Most of the route is on deep peat, but in places there are exposed patches of the mineral soil beneath.

4.1.2 ROUTE CONDITION

There are a number of parallel braids and the route is obvious on the ground (in clear conditions). Localised damage occurs where there is poor surface drainage and trampling has impacted on the vegetation, with some small areas of bare peat.

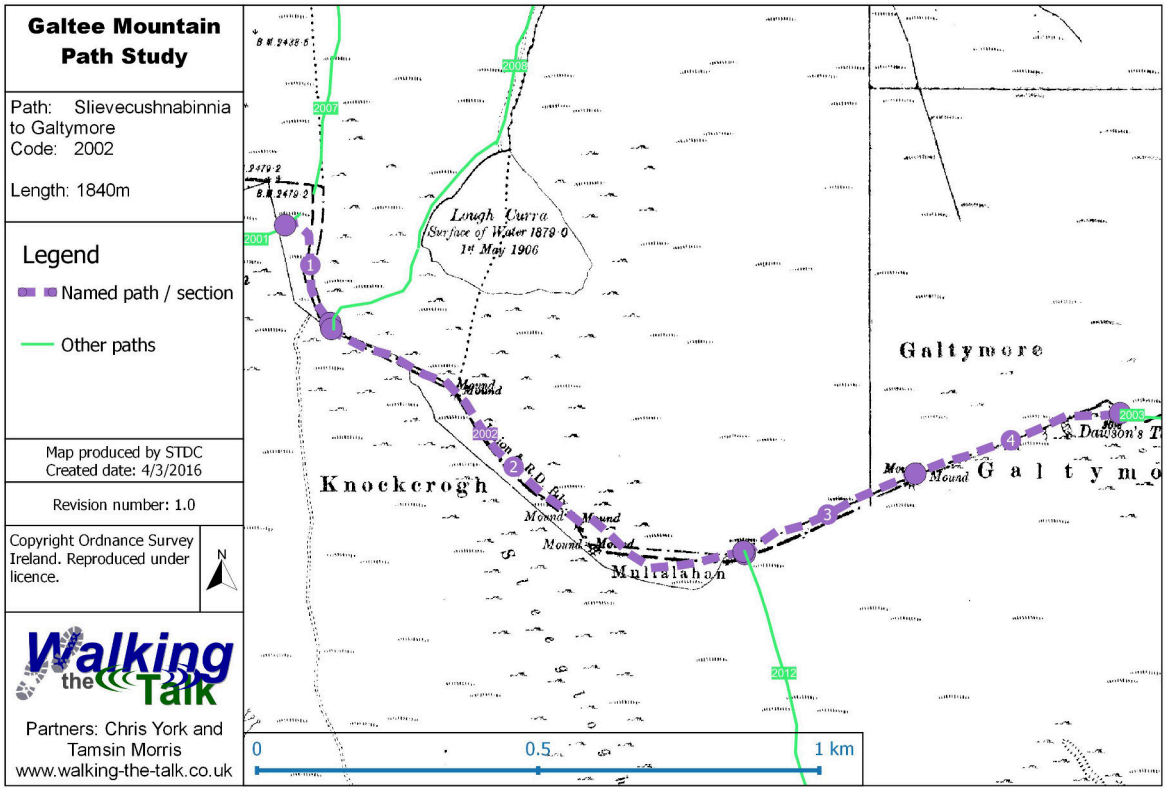
The largest area of bare peat appears to have been caused by quad bikes / scramblers driving repeatedly over a flat wet area. This is having knock-on effects for the walkers' route as this has increased the surface run-off, making the route much wetter where it crosses the outflow from the eroded area.

4.1.3 POTENTIAL FOR DETERIORATION

The levels of use by walkers do not indicate a high risk of large scale deterioration and only short sections appear to be impacted by walkers. It is likely that erosion of exposed peat could expand if walker numbers increased significantly.

Continued use of this area by quad bikes / scramblers is likely to have an increasingly large impact on the vegetation and underlying peat and may lead to complete erosion of peat down to the underlying mineral soil in places.

4.2 SLIEVECUSHNABINNIA TO GALTYMORE



4.2.1 ROUTE DESCRIPTION

The route starts beyond the summit of Slievecushnabinnia, where it joins the route to Knocknanuss. It runs along the edge of the corrie and there are multiple lines visible on the ground.

The route is on a mix of deep peat on the shallower slopes around the col and mineral soil on the western slope of Galtymore. There are some small outcrops of sandstone and conglomerate, particularly around the summit.

4.2.2 ROUTE CONDITION

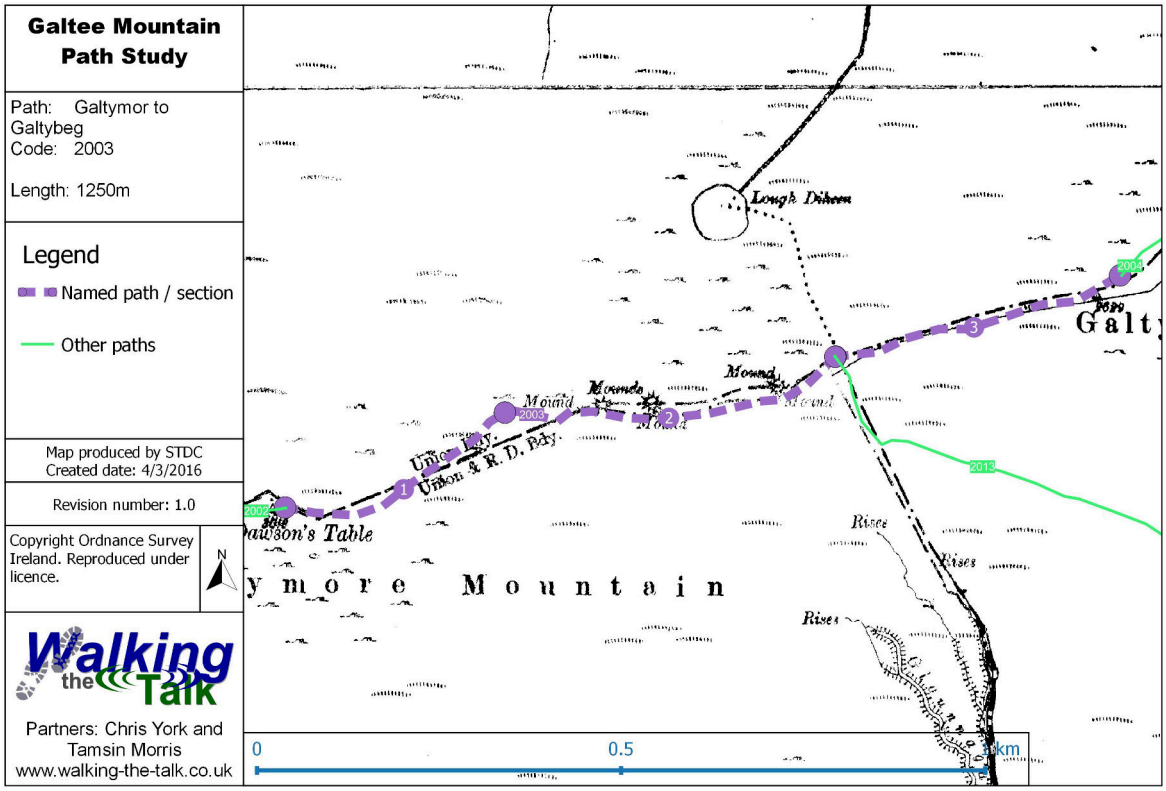
There are multiple braids and wide trample zones in places indicating higher levels of use than the western end of the ridge. On steeper slopes there are well developed desire lines exposing the mineral soil, some of which are beginning to show signs of deterioration. On flatter ground poor drainage is causing walkers to disperse, widening the area of damage. Some areas of deep peat have exposed edges caused in part by trampling, leading to loss of peat and fragmentation of the blanket bog habitat.

4.2.3 POTENTIAL FOR DETERIORATION

The levels of use appear to be causing degradation and the exposed mineral soil is at risk of erosion, particularly where the desire lines follow the 'fall line' (directly uphill) allowing the development of small gullies. Exposed peat

edges are also susceptible to erosion and the spread of soft peat in the surrounding area leads to further dispersal of walkers and potential expansion of damage.

4.3 GALTYMORE TO GALTYBEG



4.3.1 ROUTE DESCRIPTION

From the summit of Galtymore there is a well defined line eastwards but the line becomes widely dispersed with multiple braids on the slope down to the col. One well defined line traces the northern edge of the ridge and connects with a route up Galtybeg. There are also multiple braids up Galtybeg. There are areas of deep peat and high peat hags on both sides of the col, but also a large area where the peat has eroded down to the mineral soil.

4.3.2 ROUTE CONDITION

On the higher ground of both Galtymore and Galtybeg there are multiple braids of exposed mineral soil and signs of soil creep from visitor pressure. Areas of deep peat around the col have extensive signs of trampling with loss of vegetation and steep exposed peat banks where people have scrambled up or down.

Photos available on Geograph website appear to indicate that the large exposed peat bank on the Galtybeg side of the col was not caused by recreation – it predates the development of a path. It is possible that natural, gravitational processes of the peat mass are responsible for the continued exposure of a bare peat face, but the original cause of peat degradation and erosion at the col is not immediately obvious.

FIGURE 1: DEVELOPMENT OF RECREATIONAL DAMAGE ON GALTYBEG

Taken 1978 © Copyright Jim Barten

Taken 2008 © Copyright Kevin Higgins

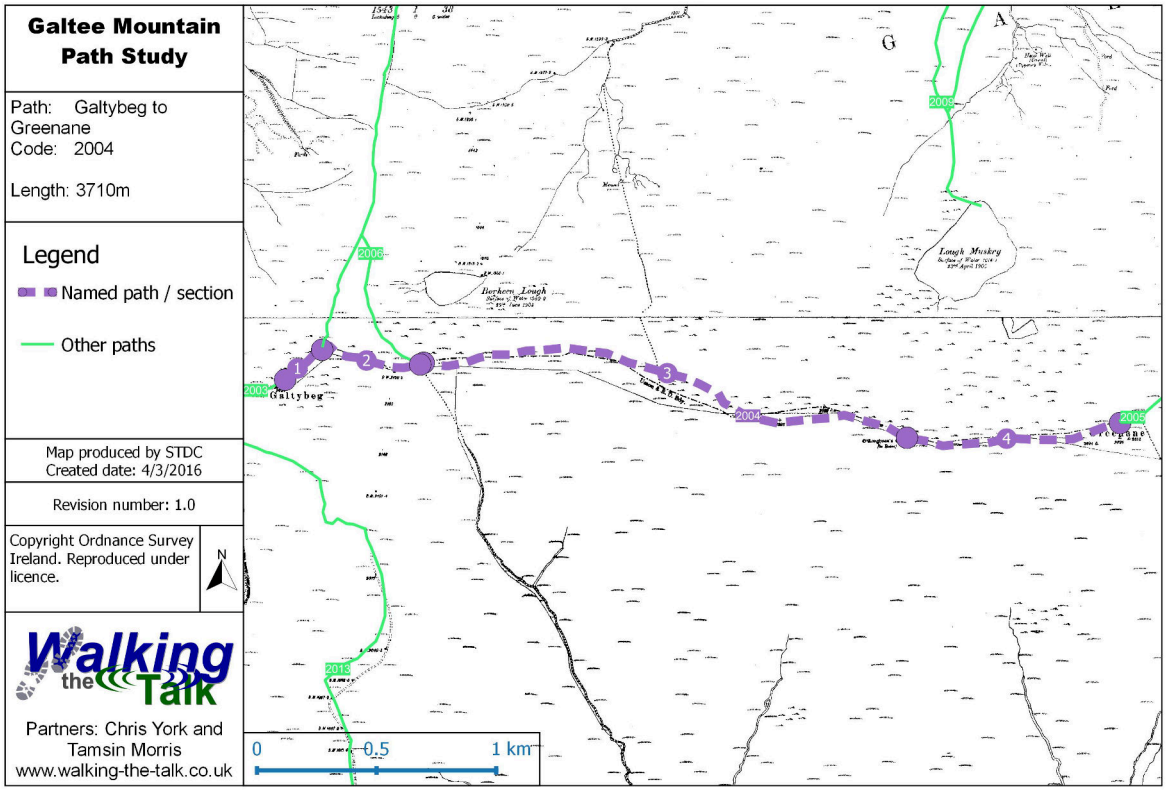
Taken June 2006 De La Salle Scouts

Taken October 2015 © Copyright Chris York

4.3.3 POTENTIAL FOR DETERIORATION

Visitor pressure appears to be high enough to continue the expansion of trampled areas meaning that there is high potential for deterioration of the peat. However, where exposed, the mineral soil contains enough fine particles to help bind it meaning that it is forms a relatively robust surface, even of slopes up to 20 degrees (>35%), and is less prone to rapid deterioration.

4.4 GALTYBEG TO GREENANE



4.4.1 ROUTE DESCRIPTION

The clearly defined route peters out and becomes discontinuous beyond the summit of Galtybeg. There are a number of trampled routes that intersect at various points and a series of metal posts appear to be used for navigational purposes – they are remnants of the wire fence that used to run along this part of the ridge. The ridge is wide and in poor visibility there are few natural features to aid navigation.

4.4.2 ROUTE CONDITION

The level of use by walkers appears to be having limited impact on the vegetation and underlying peat. There are minor localised areas of trampling and some loss of vegetation but it is not acute. There are some areas where surface water is causing erosion of exposed peat but it is not possible to determine whether they were originally trampled areas. There are numerous peat banks with exposed edges showing signs of where people have climbed up or down.

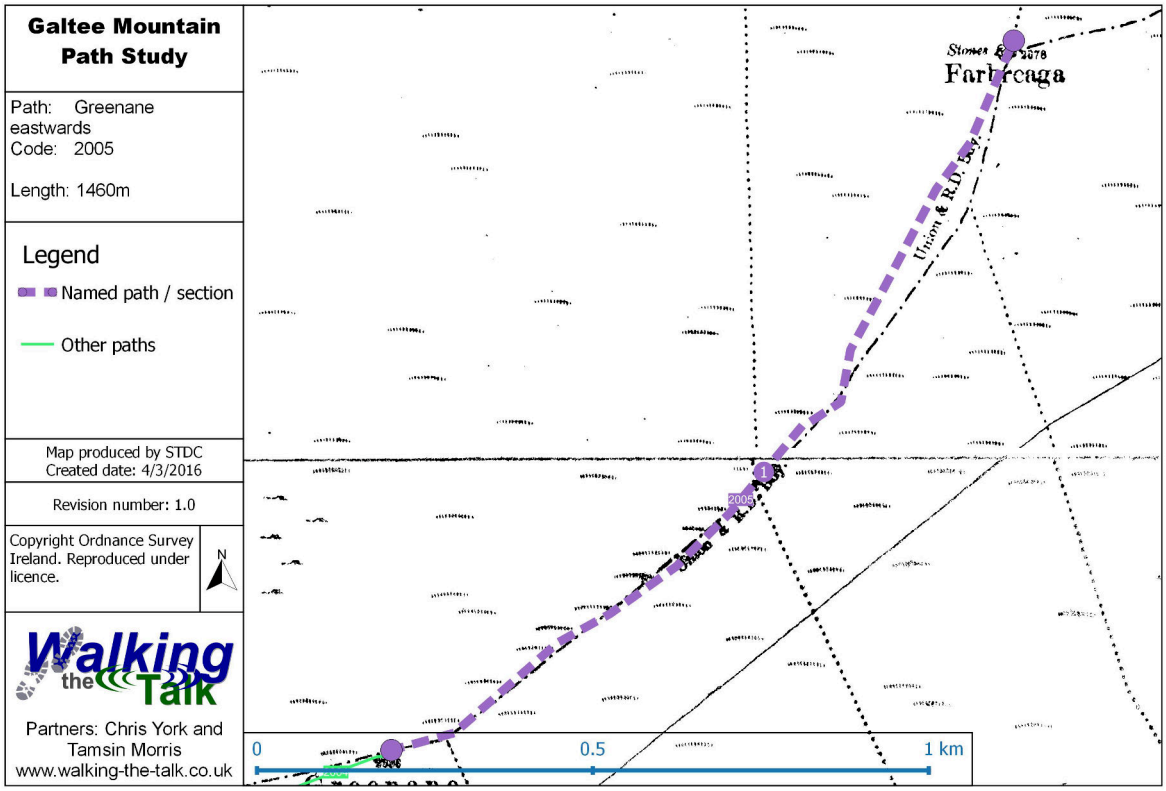
There is a large flat area of exposed peat (R 897 241) which has been used by quad bikes with recent tyre tracks being visible across the bare peat along multiple routes. At the time of survey a group of four quad bikes and a scrambler bike were observed on the summit of Greenane driving across the plateau area.

4.4.3 POTENTIAL FOR DETERIORATION

The pressure from walkers is relatively low beyond the 'sheep track' above Borheen Lough and unlikely to be sufficient to cause large scale damage or rapid deterioration. The section from Galtybeg to the 'sheep track' is steep enough in places to be at risk of deterioration if use by walkers increased markedly.

Use by quad bikes, however, has caused extensive damage that is likely to deteriorate further with continued use.

4.5 GREENANE TO FARBREAGA



4.5.1 ROUTE DESCRIPTION

The ridge route continues north-east to Farbreaga across the broad and featureless plateau. For those wishing to complete the whole 'crossing' it is possible to continue east to Slieveanard, although this section was not mapped during the site visit.

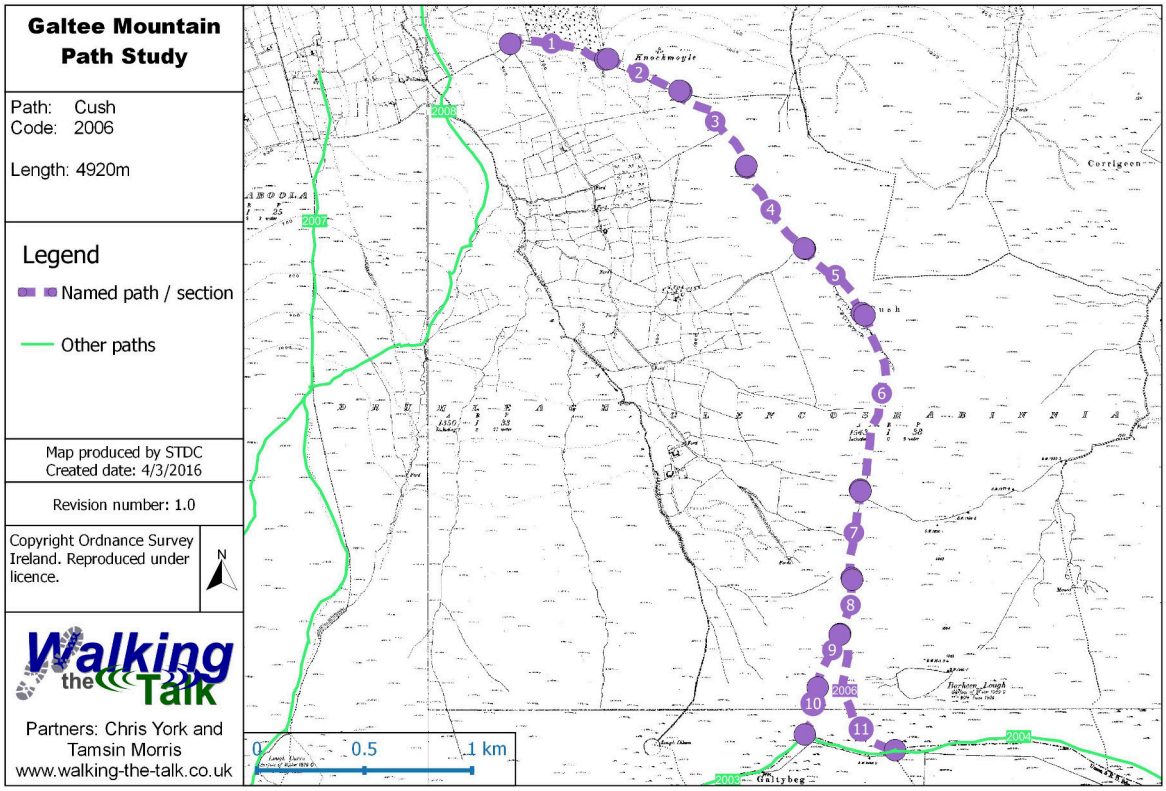
4.5.2 ROUTE CONDITION

The route beyond the summit of Greenane is discontinuous and crosses deep peat as well as exposed mineral soil in places; there is trampling of vegetation and patches of bare peat with footprints and multiple braids. On flat areas there is some waterlogging of the ground. However there are more obvious signs of quad bike use, with extensive damage to vegetation and large areas of bare peat with deep ruts and tyre marks.

4.5.3 POTENTIAL FOR DETERIORATION

The walker pressure on this part of the route is not high enough to cause extensive damage but further use by quad bikes will continue to have an impact on the habitats.

4.6 CUSH



4.6.1 ROUTE DESCRIPTION

The route follows the edge of forestry from the road via a set of concrete steps. At the top of the field a stile has been built over the stock fence and the path heads across flatter ground towards the shoulder of Cush. From the summit, the route follows an old wall directly down to the broad col between Cush and Galtybeg. There are two routes to the summit of Galtybeg: a direct steep line, and a contouring route above Lough Bohreen (which is known as the Gacia or gated step).

4.6.2 ROUTE CONDITION

The route was split into ten sections for the purposes of survey and the condition varies on different sections. The visitor pressure is thought to be the same for all sections apart from the choice of routes from the col between Cush and Galtybeg: this means that differences in apparent damage are most likely to arise from the sensitivity of the ground conditions.

There is a clear line from the road through the heather which has been used by a vehicle, with signs of scouring by water as well as trampling. A roughly constructed track then rises to the flat ground. From the stile sheep tracks are as obvious as the main route but signs of trampling increase on the steeper slope towards the top of the shoulder. Close to the summit erosion is prominent and there are areas of exposed peat, with the underlying mineral soil exposed in places.

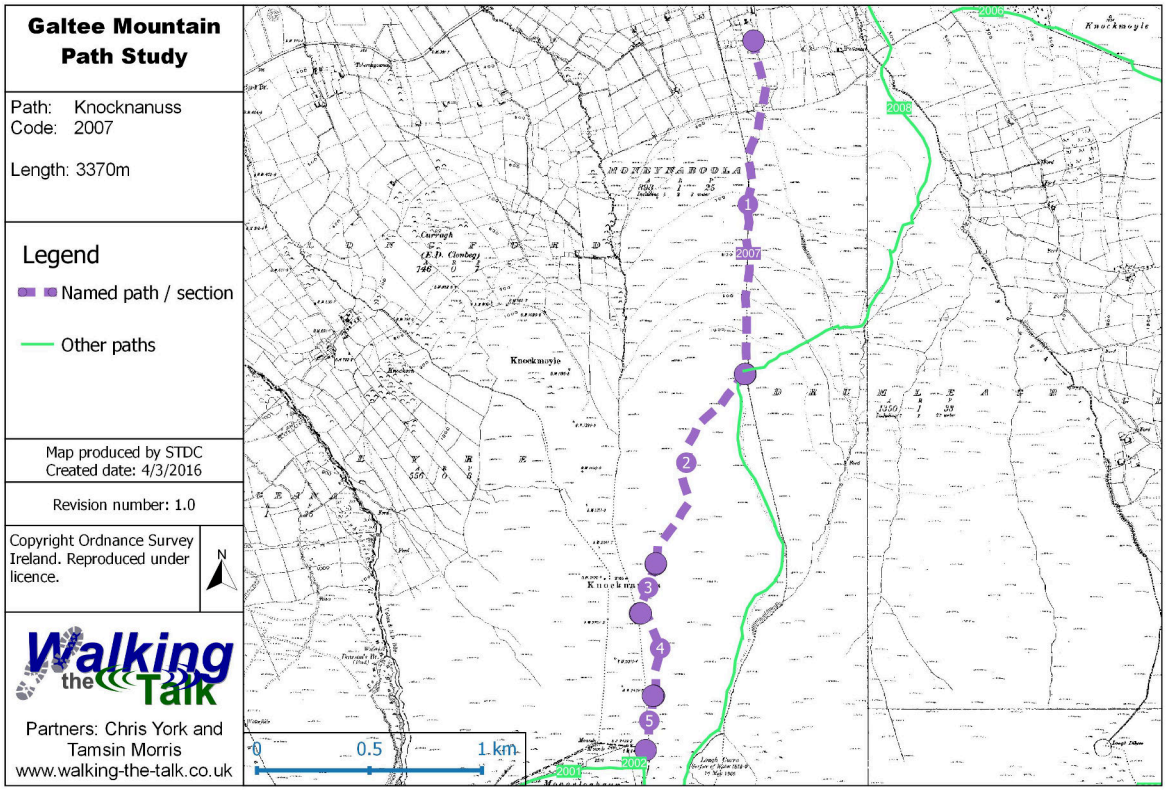
There is an obvious line from the summit down the southern shoulder of Cush but this appears to be more resilient than on the northern slope. At the broad col pressure from walkers is dispersed over a wide area of wet ground with deep peat and the visible damage is lower intensity but spread over a wider area, particularly where people have tried to avoid wet patches.

The direct route up to Galtybeg is a more obvious line and it is showing signs of pigeonholing (step development) on the steep sections. The 'sheep track' above Lough Bohreen is difficult to find from the col but is a well contained path round to the ridge.

4.6.3 POTENTIAL FOR DETERIORATION

The two sections that have the highest potential for deterioration on this route are on steep north facing slopes – up to the summit of Cush and the direct line up to Galtybeg.

4.7 KNOCKNANUSS



4.7.1 ROUTE DESCRIPTION

The route is clearly defined from "Noel's Nipple", which is an obvious landscape feature on the "Ice Road". A number of large stone cairns have been built, even though there are no hazards on the route.

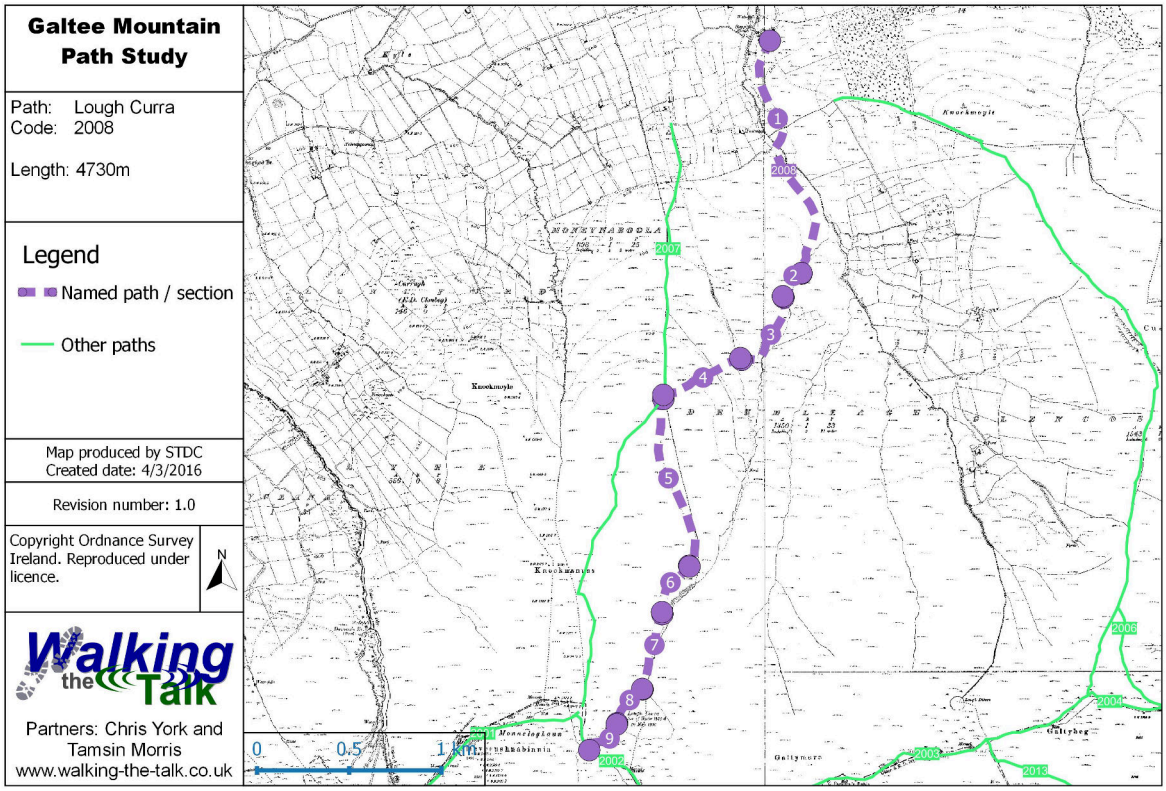
4.7.2 ROUTE CONDITION

There are a number of braids some of which are more developed than others. On the upper part of the route these braids have exposed peat in many places and on steep ground there is 'pigeonholing' amongst the heather. Drainage problems are causing people to walk on the edge of the established lines, leading to further path widening. At lower altitudes, where grasses and rushes dominate, there is very little exposed soil suggesting that current pressure can be tolerated.

4.7.3 POTENTIAL FOR DETERIORATION

Feedback from walkers suggests that this path has developed recently and has become popular in the last five years. On relatively steep ground the route is potentially vulnerable to erosion notably where where surface water runs down the exposed soil.

4.8 LOUGH CURRA



The promoted route to Lough Curra presents a management issue for the Galtee Mountains. Although it is a very attractive location and in good weather provides a stunning visitor experience, way-marking a route to 600m altitude runs against good practice recommended by the National Trails Office (Irish Sports Council, 2012).

4.8.1 ROUTE DESCRIPTION

There are informal parking areas near Clydagh Bridge and a map board illustrating a way-marked route through the forest up to Lough Curra. The route follows forest roads and constructed path sections through the forest then cuts across sheep pasture following a direct line to Noel's Nipple. Above Noel's Nipple the path follows the old 'ice road', although the waymarking cuts a corner and has led to the development of a new section of the route.

There is a steep ramp behind Lough Curra that shows signs of being used to reach the ridge, but this is not part of the promoted route. However, information has been published on the internet showing the ramp as part of a circuit including Galtymore.

4.8.2 ROUTE CONDITION

The route through the forest is in good condition, notably the work done by Mountain Meitheal, which has provided a sustainable surface to solve previous problems of route finding and drainage issues. These upgraded sections are appropriate to their location and appear to be well maintained.

Above the forest the route across the pasture is not showing undue signs of pressure, with no extensive areas of exposed soil.

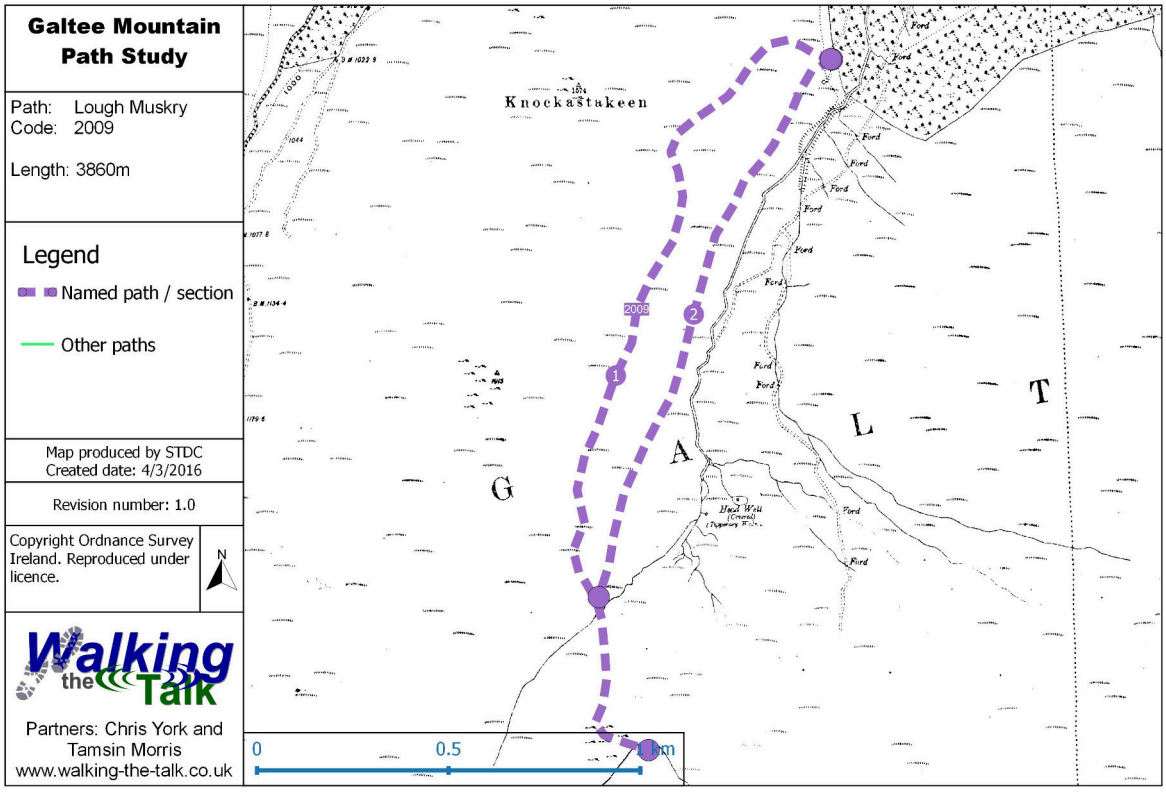
The ice road is useable but not particularly comfortable underfoot and in places drainage failures mean that walkers are creating new braids to avoid wet ground. The way marked short cut is in relatively poor condition as it does not appear to have had any construction or maintenance – it is simply a series of posts across the hillside.

4.8.3 POTENTIAL FOR DETERIORATION

The sections on forest roads and constructed paths are robust and well maintained so unlikely to deteriorate. The 'ice road' is unlikely to deteriorate further, although the way marked short cut is not robust and is at risk of degrading further at current levels of use.

The most sensitive area is the ramp above Lough Curra – increased use would be likely to cause rapid, and potentially catastrophic, deterioration due to the steepness of the ground.

4.9 LOUGH MUSKRY



4.9.1 ROUTE DESCRIPTION

The route follows a constructed track through the forestry and beyond the gate (with stile) there is an old track that was constructed to provide access for the water supply, as far as the lough. There is a more direct route from the stile which follows the line of the water pipeline and this is also used by quad bikes.

4.9.2 ROUTE CONDITION

The section through the forestry is in good condition. Beyond the gate the track deteriorates, through lack of maintenance and is very rough in places. The drainage features have failed and there are signs of scouring.

The direct route has not been constructed and there are wheel ruts from quad bikes. Walkers do not appear to be having significant impact on this route.

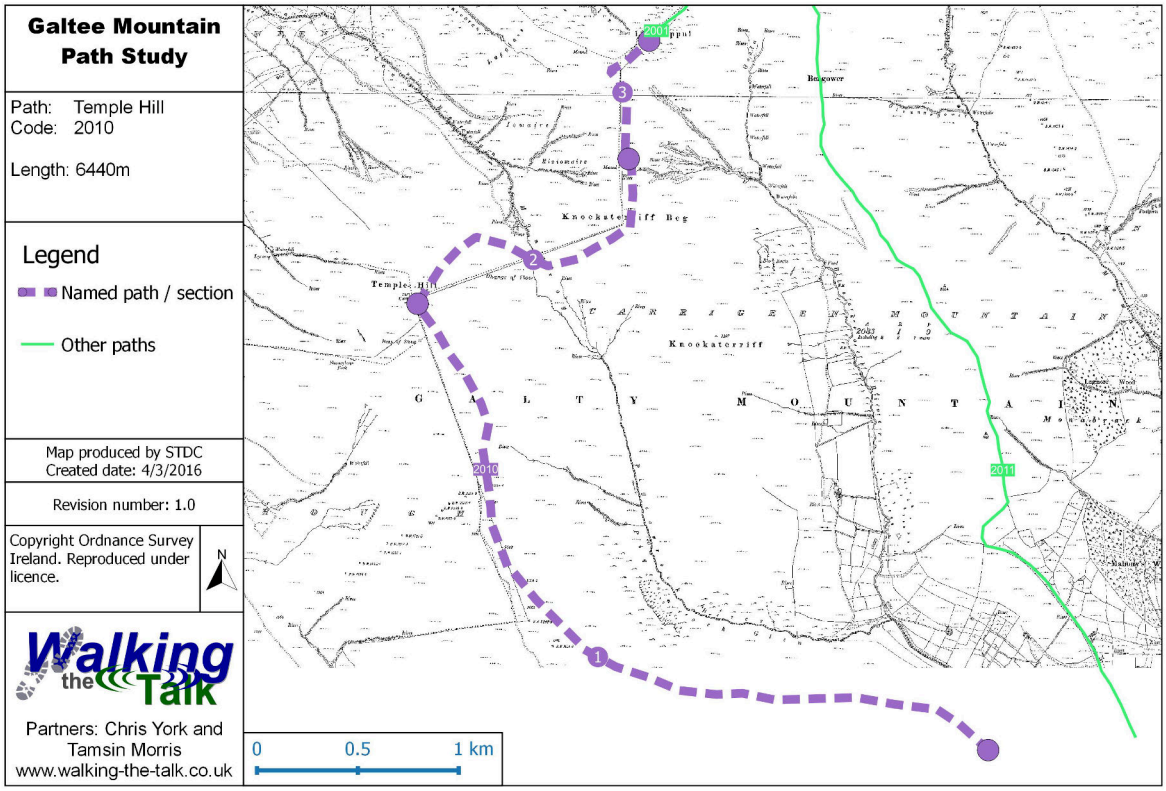
Around the lough there are deep scars from quad bikes and areas of bare peat caused by repeated use.

4.9.3 POTENTIAL FOR DETERIORATION

The constructed track will continue to scour and become rougher under foot and this may cause trampling of the margins where people avoid the worst conditions.

Continued use of quad bikes will have further impact on the habitats.

4.10 TEMPLE HILL



4.10.1 ROUTE DESCRIPTION

There are a number of options for reaching the summit of Temple Hill, the common starting point of the Galtee Crossing (or Galtees Crossing). The start points range from Angleborough to Pigeonrock Glen, with routes passing through forestry and pasture. There is a line visible along the ridge, which appears to have been developed by vehicle use. From the summit of Temple Hill the route drops into the glen and up to Knocknaterriff. Some walkers gain the ridge and head to the summit but there are also signs of people heading straight towards Lyracappul. There is an old boundary line (possibly a turf wall) that is used as navigation aid to the summit of Lyracappul.

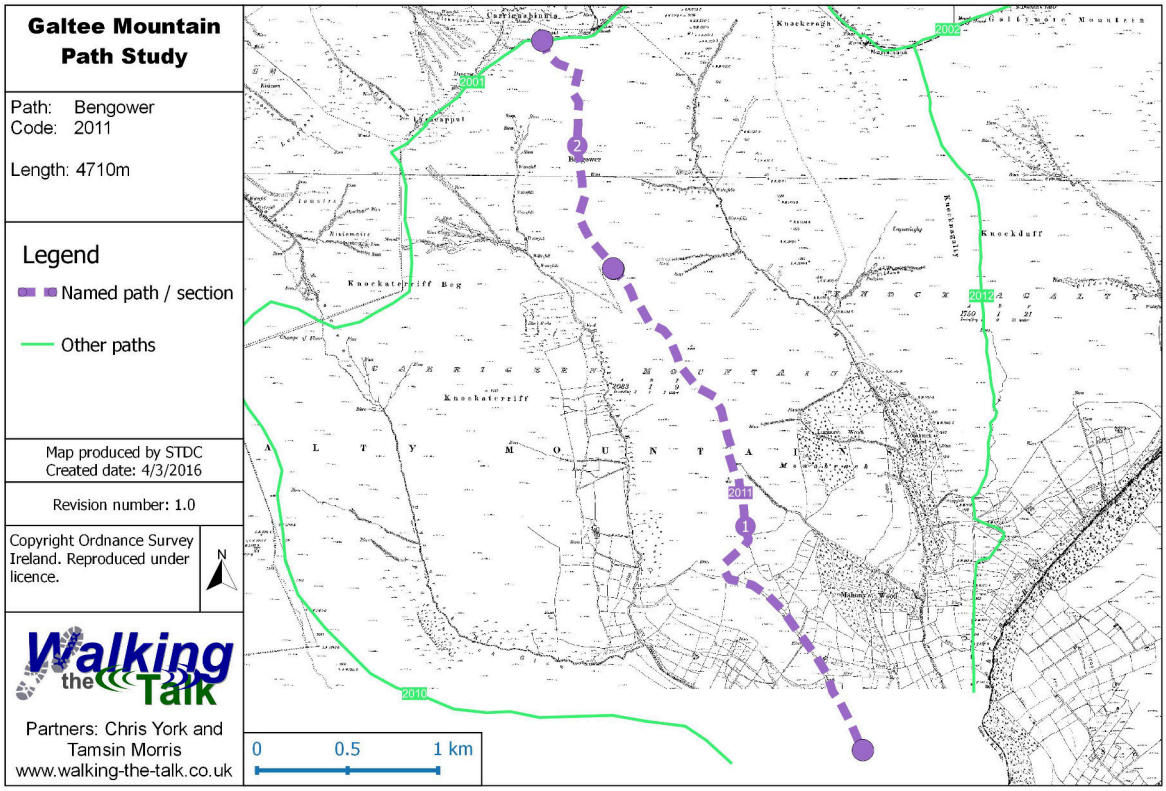
4.10.2 ROUTE CONDITION

The vehicle route along the ridge of Temple Hill does not look to be in frequent use and the impact of walkers in this area is negligible. From the summit there are signs of temporary way markers (plastic tape) including across the deep peat in the glen. The route is not clearly developed on this line and there are only localised signs of impact by walkers. There is an old peat cutting on the col between Knockanterrif and Lyracappul which has signs of walkers climbing the steep peat banks. Above the peat bank the old boundary wall concentrates use and on this steeper ground there are signs of trampling and vegetation breakdown.

4.10.3 POTENTIAL FOR DETERIORATION

Current levels of use by walkers do not appear to be having a significant impact on this route. The boundary wall section, being on steeper ground and taking all of the walker pressure, may deteriorate over time.

4.11 BENGOWER



4.11.1 ROUTE DESCRIPTION

There is a spur of the ridge that runs south approximately halfway between Slievecushnabinnia and Lyracappul. There is an old peat road that leads from just below the col down to Blackrock river. An alternative route takes in the summit (629m, un-named on the map) and meets a track that leads to the way marked Attychraan Loop (allowing access to King's yard).

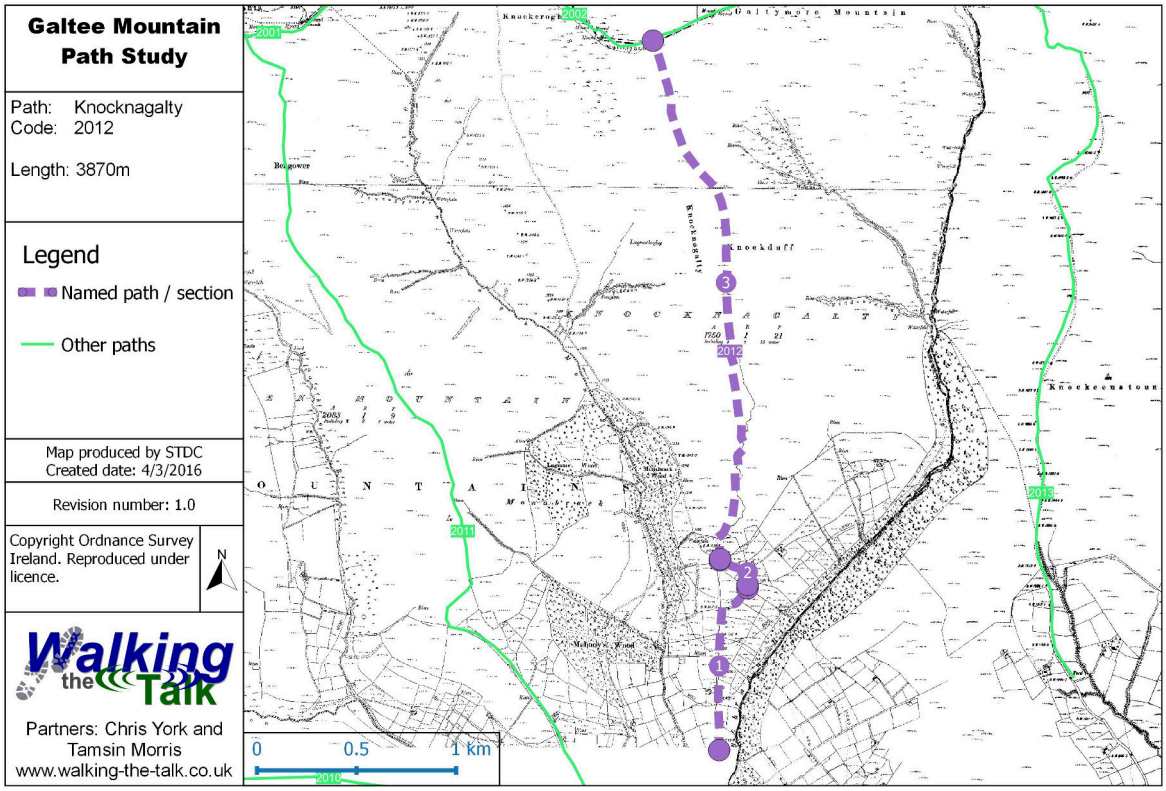
4.11.2 ROUTE CONDITION

There is no visible route on the ground caused by walkers although there are some tracks from quad bikes.

4.11.3 POTENTIAL FOR DETERIORATION

At current levels of use by walkers there is no reason to suppose that the route will deteriorate significantly

4.12 KNOCKNAGALTY



4.12.1 ROUTE DESCRIPTION

From King's Yard there is a constructed farm track that leads up to a sheep handling area. From here there is no obvious route to follow on the ground. The ridge is reached by walking over open ground along the broad shoulder of Knocknagalty hill and up to the end of the dry-stone wall.

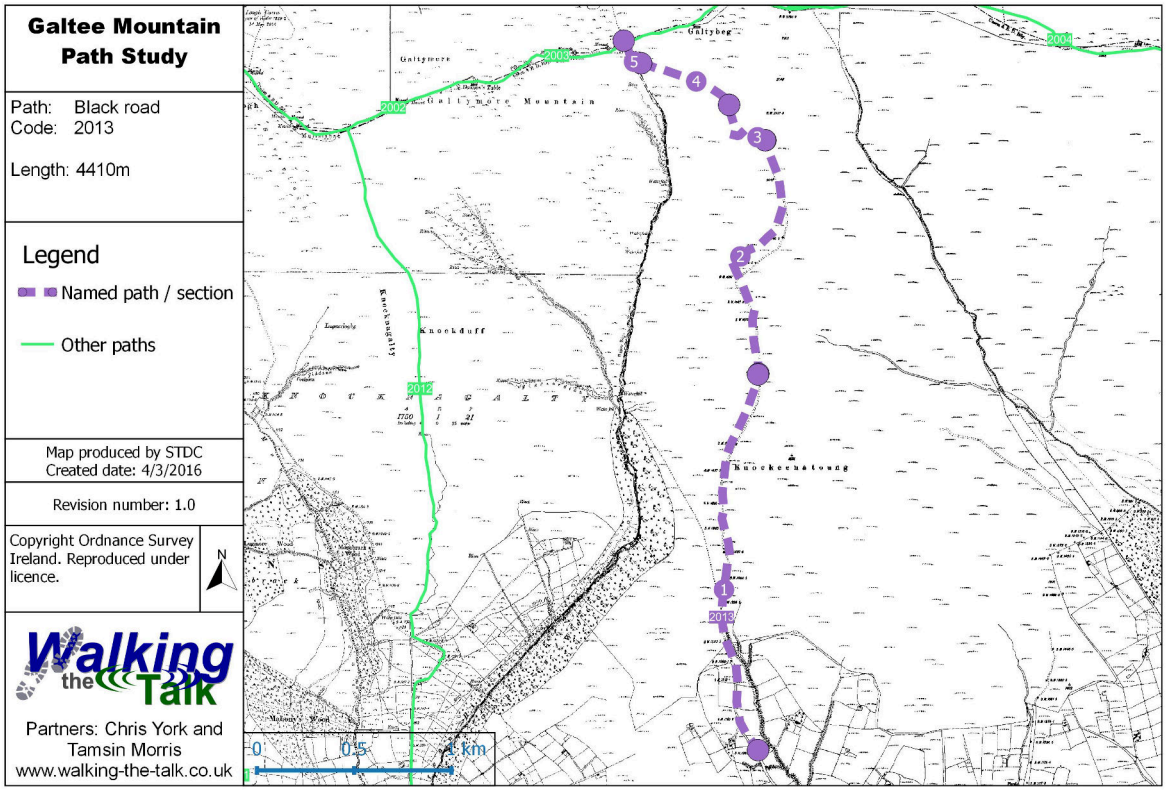
4.12.2 ROUTE CONDITION

The route beyond the farm track is not obvious on the ground and it is difficult to distinguish between sheep tracks and those developed by walkers. There are a few short sections where footprints are visible on higher ground.

4.12.3 POTENTIAL FOR DETERIORATION

At current levels of use there is limited scope for deterioration.

4.13 BLACK ROAD



4.13.1 ROUTE DESCRIPTION

From the car park at the road end a well constructed track leads up the hill and through two gates to open ground. The route climbs steadily and contours around Knockeenatoung to reach a col where a memorial to a plane crash has been erected (off the track). From the memorial the track climbs up towards the peat cuttings below Galtybeg where a large cairn marks the junction with the main route to Galtymore.

From the cairn there are a number of braids that lead towards the end of the constructed track. There are a number of 'launch points' across the blanket bog towards the col with two main lines that have developed. A set of way markers had been installed in recent years to define a line across the blanket bog, but once the surface vegetation was trampled this area became quickly impacted. The way markers have been removed. These desire lines converge at an area of peat hags and banks and the route continues along the edge of a high bank up to reach the col where the main ridge route runs between Galtymore and Galtybeg.

4.13.2 ROUTE CONDITION

The constructed track has been neglected for some time and many of the drainage features no longer function. This has led to erosion of the surface and some gullying – in wet conditions it appears that the track acts as a watercourse and there are many loose cobbles which make walking uncomfortable in places. Walkers are commonly walking on the track verge and there are braids on both sides for much of the way – some sections of the braids are widening as the vegetation gets trampled and conditions underfoot become wet and muddy.

Above the cairn the braids appear to be more commonly used than the track despite their poor condition. Beyond the end of the track walker pressure has caused widespread trampling of the blanket bog, with exposed peat and heavy trampling in places. The desire lines across the blanket bog appear to be self limiting – once they become impacted pressure reduces as people spread to other lines, allowing some recovery.

The section from the peat banks up to the col has lost peat coverage and the route runs on the underlying mineral soil – this is a more robust surface and in general is able to cope with the walker pressure.

4.13.3 POTENTIAL FOR DETERIORATION

The constructed track could suffer from catastrophic damage during heavy storms as the drainage system is no longer functioning, however the risk of this is thought to be relatively low. The braids along the edge of the track are likely to deteriorate further but this will be limited in extent as walkers are unlikely to stray very far from the track, unless there is catastrophic damage to the track.

The area of blanket bog appears to recover when walker pressure is removed but increased use or concentration of existing pressure on a single line is likely to cause deterioration.

The peat banks are gradually eroding, partly through walkers climbing them and partly by surface water erosion. This loss of habitat is likely to continue and could accelerate with increased pressure.

5 OPTIONS FOR MANAGEMENT

5.1 THE 'DO NOTHING' OPTION

This is the 'no immediate cost' option. The survey shows that some of the existing routes are actively impacting on the Galtee Mountains and are likely to have a lasting impact if there is no intervention to control peat erosion and manage visitors. If no action is taken, therefore, the damage will continue to intensify and may have a long term impact. This means that the long term costs of doing nothing are likely to be high and it is very probable that such costs would be significantly higher than early intervention to limit and reverse the damage.

5.2 PATH MANAGEMENT TECHNIQUES

A range of 'best practice' techniques have been developed to reduce and reverse the localised and landscape scale environmental impacts of recreation. These are based around developing robust walking surfaces and revegetating areas where erosion has occurred. The techniques used can vary from a fully constructed path, through 'spot repairs' to minor interventions to encourage walkers to remain on a defined line. The choice of technique(s) is usually made using a combination of factors, such as topography, landscape and ecological sensitivity, levels of recreational use, degree of damage, potential for deterioration and availability of materials.

The main challenges in the Galtees, as in many other Irish mountain ranges, are the depth of peat and lack of suitable stone on site for constructing drainage features. Whilst it is technically possible to construct paths across deep peat, it may not be desirable or cost effective to do so – the result would be highly visible from a distance and would represent a massive investment per potential user. This issue is compounded by the fact that spot repairs in deep peat are not recommended – the recreational pressure at the end of a constructed section where it meets trampled peat is too high, leading to a requirement for more construction, and the end result is an incremental extension of constructed path.

The lack of stone could potentially be addressed by 'borrowing' from other sites within the mountain range and transporting it to the work site (probably by helicopter). This would require permission from NPWS and the relevant landowner(s) and stone would need to be carefully selected to match the underlying rock at each work site.

The two main 'approaches' to path repair (see the sections below on Full Repair and Early Intervention) use similar basic techniques and are not mutually exclusive: in some situations it may be appropriate to use a combined approach according to the level of damage and use.

5.2.1 FULL REPAIR

Full repair of paths involves designing a route to a specification suitable to its location and the materials available on site. This will include provision of drainage features to prevent water from damaging the path and other constructed features to provide a sustainable surface for people to use. If there is insufficient stone available for building drainage features or a pitched surface it may be possible to import weathered stone for this purpose, usually by helicopter.

In areas of deep peat the main challenge is to prevent the path from sinking, which generally involves laying a strong geotextile sheet beneath the path and 'floating' the path. Of particular concern is path construction on peat that lies on slopes beyond 10 degrees, where gravity acts on the whole peat mass as well as the path. Floating a route may not provide a sustainable solution unless there is a means of anchoring the path at key points, and this would then potentially introduce differential shear stress with the surrounding peat. This becomes a more complex engineering problem than situations where the path is built on a solid substrate. The large volumes of material that need to be moved and used to construct a floated path mean that excavators are often used – this adds to the burden of ensuring high quality work and requires very close supervision of skilled operators and specialised low ground-pressure equipment.

Fully repaired paths, especially those through extensive areas of peat, can have a distinct landscape impact if they are poorly designed. However well designed routes through areas of intense damage that are combined with habitat rehabilitation should result in a lower visual impact.

5.2.2 EARLY INTERVENTION

The focus is on defining a path line to prevent further deterioration and ensuring that it is protected against erosion. The work usually includes drainage to keep water off the preferred route, landscaping work to keep people on the preferred line and may or may not include building a path surface. It becomes an ongoing 'relationship' with the route rather than a 'build and forget' project that often accompanies a Full Construction approach. Each route will potentially be adapted over time to anticipate or respond to changes in use and recovery from damage.

Early Intervention work can have a high visual impact if it is implemented insensitively, through for example building large regular drainage features. It is important therefore that work is done using 'light touch' or low visibility techniques, which promote a style of path that fits within the landscape rather than cuts across it. This can give rise to a path that feels like it has naturally evolved, potentially allowing walkers to have a high quality mountain experience rather than an extension of an urban walkway.

5.2.3 BOARDWALKS

Construction of a wooden or plastic boardwalk is an alternative method of access provision in areas of high visitor pressure and sensitive habitat. This option prioritises the habitat above all other considerations, despite having a defined impact on the habitat itself. They are highly insensitive to landscape setting and provide visitors with a strongly sanitised experience by separating them from the ground and imposing the linear structure on their field of vision.

In the case of the Galtees there is no justification for building a boardwalk – the visitor pressure is unlikely ever to be sufficiently high and the potential landscape impact would greatly outweigh any benefit to the habitat given that other repair techniques exist. No further consideration is given to boardwalks in the high ground.

5.3 POTENTIAL PRIORITIES FOR PATH MANAGEMENT

The survey revealed that some parts of the Galtees are under greater pressure than others and some areas are more susceptible to damage than others. There is also an overlap between the pressure and susceptibility and these locations are considered to be among the highest priorities. The different paths are presented in order of perceived vulnerability, although there may be other factors that determine the priority for repairing different paths, which are considered in section 6.

5.3.1 GALTYMORE TO GALTYBEG

The section of the main Galtee ridge under greatest pressure and most susceptible to damage is around the col between Galtymore and Galtybeg. Trampling and human induced erosion is most evident on the deep peat however a number of routes have developed that avoid the peat – these are most likely to withstand further use and could be made more resilient through careful repair. Additional definition of a line and 'hardening' of a route that avoids deep peat would help to relieve pressure on the surrounding habitats and provide a route that is resilient to pressure from walkers.

5.3.2 SLIEVECUSHNABINNIA TO GALTYMORE

The section of ridge from Galtymore, westwards to the col above Lough Curra appears to be under slightly lower pressure to that between Galtymore and Galtybeg, and it forms part of the popular route from the northern side of the mountain range (Cush, Lough Curra and Knocknanuss). It would be possible to subtly define a line that avoids the majority of deep peat and careful repair would make this route more resilient to pressure. This section runs only as far as the junction with the Knocknanuss route and not as far as the summit of Slievecushnabinnia itself.

5.3.3 CUSH

The direct ascent / descent on either side of Cush, and the direct route to Galtybeg are the next most popular paths. It should be possible to repair short sections of these routes to prevent further erosion rather than develop the entire route. Action to deflect walkers to the 'sheep track' above Borheen Lough would be beneficial in reducing the pressure on the direct route to Galtybeg from Cush – it is likely that the habitats would recover if there is early intervention. This may require establishing a defined route from the col (between Galtybeg and Cush) and the 'sheep track' to pick up people walking from Cush towards Galtybeg and encourage them towards the more robust route. It may not be necessary to construct a path the whole way, just enough to deflect attention from the direct line.

5.3.4 KNOCKNANUSS

Some of the steeper sections of Knocknanuss are beginning to show signs of deterioration and it is likely that much of this is caused by descending walkers (forces are greater going down than for people going uphill and lead to pigeon-holing and step formation). Minor drainage features and realignment away from the 'fall line' would be beneficial and would make the route more sustainable. It may also be useful to close down a number of braids through landscaping.

5.3.5 BLACK ROAD

The Black Road is anecdotally the most popular access point to the Galtees and the section between the constructed track and the col plays an important role as a 'buffer' for the ridge. However, any development of a robust path or a way marked line across this section would present a significant risk to the rest of the mountain range. It would make access much easier for walkers, so would be likely to receive increased traffic, and may also act as encouragement to people who are ill prepared for the mountain environment.

The lower sections of the Black Road are deteriorating through lack of maintenance and walkers are developing braids to avoid areas where the surface is rough or waterlogged. The top of the road near the old peat cuttings has a number of braids and is poorly defined despite being a robust construction. The whole of the Black Road could be improved to reduce the impact of walkers on the surrounding habitats, but improvements would need to take account of the potential to encourage greater pressure on the mountains and the risk of motorised vehicle access.

5.3.6 LOUGH CURRA

A small amount of drainage work is required near the top of the ramp to deflect water away from the existing route. Other work on the ramp is not recommended as this would be likely to encourage more walkers on to the route that that is unsustainable without full construction.

Repair work on the Ice Road would be beneficial to keep people on the existing route and the 'short cut' should be removed. Consideration should be given as to whether the way-marking is appropriate, and potentially the posts could be removed. Alternative routes within the forest could be developed, but this is beyond the scope of the current study.

5.3.7 LYRACAPPUL TO SLIEVECUSHNABINNIA

The deep peat along the ridge on either side of the wall presents a significant challenge for reducing the impact of walkers. Any work to drain wet areas or construct a section of surfaced path would simply shift the problem along to the end of the repairs. There is no viable solution except for a fully constructed path or boardwalk for the entire length – neither of which are appropriate for the location or levels of use of the route. However, restoration of the intense damage caused by quad bikes and scramblers may help to reduce the amount of surface water draining off the ridge.

5.3.8 LOUGH MUSKRY

The route would benefit greatly from repair of the existing built track at least as far as the stream crossing and landscaping to reinstate the more direct line that is used by quad bikes.

5.3.9 TEMPLE HILL TO LYRACAPPUL

Landscaping of the old fence line from Lyracappul, which is an obvious line for those traversing the Galtee Mountains, would be beneficial for reducing the impact of walkers and may help to reduce the pressure on a single line. No other work is suggested on this route.

5.4 PEATLAND RESTORATION

The extensive areas of exposed peat and high peat banks are susceptible to erosion which impacts on the habitat and releases stored carbon into the atmosphere. As part of any work to reduce the physical impact of walkers (and motorised vehicles) consideration should be given to repairing habitat damage and reducing the fragmentation of the high altitude blanket bog.

There are a wide range of examples of peatland restoration projects in Ireland, the UK and other parts of Europe but these have mostly worked on lowland sites, particularly in Ireland. Some techniques can probably be transferred but the environmental conditions on the Galtee Mountains will add to the challenge and extend the time that restoration will take (due to reduced growth rates and shorter growing season compared with lowland sites). Upland peat restoration projects that may have relevant to the Galtees include Ben Lawers in Scotland, and Pumlumon in Wales.

The suggested techniques for restoring areas of peatland would include:

- Removing pressure from people wherever possible (walkers and motorised vehicles)
- Reducing surface water flow through creating small dams and dispersing water into the bog rather than away from it;
- Encouraging growth of colonising blanket bog species through transplanting and seeding;
- Protecting bare peat with biodegradable landscape fabric (e.g. Jute or coir mats) and encourage plant colonisation;
- Reprofiling exposed peat banks to reduce erosion potential.

The potential outcomes would be restoration of active blanket bog habitat at high altitude, a net increase in carbon storage and reduced landscape impact from recreation.

The conservation status of the Galtee Mountains means that any potential habitat restoration work would require permission from NPWS and this could be a positive opportunity to trial techniques for replication in other upland areas across Ireland.

5.5 VISITOR MANAGEMENT

As well as the potential to repair and restore the mountains, there is an important role for managing access as part of the overall management of the mountain range. There are a number of options for visitor management that could be considered:

5.5.1 OPTION: REMOVE ALL VISITOR PRESSURE

The option of preventing access to the mountains theoretically exists and it is possible that habitats would recover if given sufficient time. This would probably take decades, although in places the blanket bog is no longer a functional ecosystem, and the closure would need to be rigorously enforced. However, it is not considered practical to prevent all public access to such a large tract of land which has multiple entry points and therefore enforcement would be impossible.

If this option were to be selected it would be the equivalent of 'do nothing' option as enough people would be likely to defy a ban such that it would be an ineffective measure. This option is therefore seen as unviable.

5.5.2 OPTION: REMOVE PRESSURE FROM MOTORISED VEHICLES

Access to the Galtee Mountains by quads and scrambler bikes for recreational purposes was considered to be the most important issue land owners that attended the meetings. The damage done is disproportionately high for the

number of vehicles using the high ground and it appears that the style of riding and activities undertaken are major contributory factors.

Steps to prevent unauthorised access (i.e. anywhere within the SAC except for direct land management activities) would be required along with a programme of information and education to discourage use of the Galtees by motorised vehicles. It is likely that the majority of riders are young men and it would be necessary to engage with them before they reach the mountains – on-site engagement is potentially risky for the safety of anyone who challenges those using quads or scramblers. This work could be coupled with an initiative to enforce the law, to provide active discouragement and incentives to comply with the law.

It is recognised that the issue of motorised access to mountains is an endemic problem in Ireland and is unlikely to be successful if it is targeted only at local people. A regional or national campaign to discourage the illegal use of motorised vehicles off road may have a better chance of changing attitudes among the peer-group who are likely to own or aspire to use off-road motorised vehicles.

5.5.3 OPTION: PROVIDE ALTERNATIVE RECREATION OPPORTUNITIES

A programme of path development on lower ground, where the impact of recreation on the habitats is likely to be less, may help to provide alternative experiences for visitors. This would also potentially have an economic benefit of retaining visitors in the area for a longer stay. The development of such an area-wide strategy is beyond the scope of this study, but similar principles of minimising the impact of visitors and long term maintenance should be central to any considerations for all such paths. This will help to retain and enhance the special qualities of the area rather than impose inappropriate developments and negatively affect the visitor experience.

5.5.4 OPTION: MANAGE CAR PARKING CAPACITY

Visitor pressure can, to a certain extent, be controlled by the availability of car parking at the main access points and the location of car parks themselves can influence the popularity of a route onto the mountains. Experiences from other mountain areas suggest that the provision of high level car parks close to summits lead to increased path damage and 'the long walk in' can be used to reduce pressure. The size of car parks is also problematic – there is commonly pressure from walkers for larger car parks, but expanding the size simply leads to large full car parks rather than small full car parks.

The Black Road car park lies at approximately 350m and is only 5km from the summit of Galtymore. This is the easiest route in and has the largest car parking capacity. The amount of space is limiting pressure on the route and expanding car parking capacity would increase the pressure on the summit.

At present there are only informal areas on the north side, which have a reputation for vehicle crime and land managers have expressed legitimate concern about congestion. Dedicated parking space in this area would be helpful in reducing traffic management problems. A nominal charge could be introduced for parking which could help offset the cost of security measures to reduce crime and could potentially contribute to the management of paths.

5.5.5 OPTION: INFLUENCE BEHAVIOUR OF WALKERS

The repair of the path and reinstatement of habitats will help to deal with the immediate issue of environmental damage but walkers need to be aware of their own potential impacts and ways to minimise them. Influencing behaviour is a complex area of visitor management and requires sustained effort to be successful. The design of paths and associated landscaping will give visual clues about where to walk, but not all visitors will respond to the subtlety of these methods.

Clear information needs to be easily available to all visitors highlighting the pressures on the Galtees and what people can do to help the long term management of the mountains. This involves making information available before their visit, at the start, and afterwards. Information could be conveyed through on-site interpretation at car parks, widely available leaflets and online.

It is not possible to control all messages that are communicated about the Galtees, but a strong campaign to influence 'opinion formers' may help to align external messages with those from the 'managing body'. It may be necessary to

monitor online information, and intervene where necessary to counter any misinformation or potentially damaging behaviour. This could include social media channels as well as websites – people sharing their experiences can encourage more people to behave in a similar way, which could be detrimental to the efforts to manage the paths.

An online 'presence' of a dedicated website would be a useful way retaining some control over what is communicated. This would allow other organisations and individuals to link to the site and promote the consistent messages that are required. The domain www.galtees.ie is currently available.

6 RECOMMENDATIONS

6.1 CREATE AN OVERSIGHT GROUP FOR THE GALTEES

At present there is no single body or organisation that has the capacity or authority to manage the pressures and impacts of people on the Galtees and this is compounded by the Limerick and Tipperary County boundary that divides the mountains. In order to coordinate action and to promote responsible access to the Galtees it is recommended that a forum or partnership is created, bringing together the key stakeholder groups for the whole mountain range:

- Land managers (including farmers / landowners);
- Statutory bodies;
- Non-governmental Organisations;
- Local development companies;
- Recreational groups.

As with many partnership approaches, time will be required to identify the relevant organisations and people and dedicated resources to assist with administration and management will be needed in order to make significant progress. However, if constituted in an appropriate form, this partnership could potentially apply for funding and take responsibility for delivering some of the recommendations in this report.

6.2 DEVELOP A VISION FOR THE GALTEES

It is recommended that the stakeholders develop a joint vision for the Galtees that recognises the high conservation and heritage value of the mountain range and seeks to restore and enhance the fragile mountain environment. Without prejudice to the development of a shared vision by stakeholders, some issues that could usefully be addressed by the vision include:

- The need to prevent illegal access by motorised vehicles to the sensitive environment of the Galtees
- The need to prevent further damage by walkers and to repair damage already caused;
- The role of recreation and potential for people to contribute to the management of paths in the Galtees;
- The need to help people to enjoy walking in the Galtees without having an impact on the mountains;
- The opportunities to restore fragmented upland blanket bog to functioning habitats;
- The opportunities to build local and national capacity in path management;
- The potential impact of large-scale events on paths and habitats;
- The need for careful stewardship of the land to protect the designated habitats;
- The opportunities to improve the benefits to the local economy from outdoor recreation without compromising the environment;

6.3 CONSIDER THE IMPLICATIONS OF PATH PROMOTION

The internationally protected habitats are vulnerable to erosion caused by recreation, among a number of factors, and the current level of pressure indicates that the existing damage is unlikely to completely recover by itself. Additional promotion of routes, without some form of ongoing management, would therefore be irresponsible. However, the technical challenges of developing a robust network of paths that could withstand additional pressure are high and the costs would be prohibitive when compared with the potential benefits of this work. Promotion of mountain paths in the Galtees as a 'visitor attraction' is therefore strongly discouraged. Additionally, raising awareness of responsible use of the mountains is an essential part of managing visitors (see section 6.9 below).

Improving the benefits to the local economy at current levels of use is more important than increasing the number of visitors – this could involve, for example, encouraging these visitors to spend money in the local economy as part of their visit (including overnight stays), and encouraging business to recognise the value and opportunities of offering appropriate products and services for hill-walking visitors.

There are a series of 'Galtymore Climb' signs on the south side of the Galtees. These 'tourist brown signs' are usually used to promote visitor attractions and the others in the area indicate facilities and businesses that are actively managed. The only managed facilities promoted by these signs are at King's Yard, but even here there is no robust route to Galtymore. Promotion of an unmanaged space as a tourism destination is therefore considered to be unsustainable, and is a potential hazard for visitors ill-prepared for a mountain environment. The signs are targeted towards 'casual' visitors rather than helping to locate a destination for people who have planned a visit. It is therefore recommended to remove these signs or change them to indicate parking areas only (e.g. King's Yard and Black Road).

6.4 DISCOURAGE AND PREVENT UNAUTHORISED ACCESS BY MOTORISED VEHICLES

The damage caused by reckless use of quad bikes and scramblers within the SAC exceeds the impact of walkers in severity, and possibly in extent. Action to tackle erosion by walkers becomes pointless if motorised vehicles are not prevented from accessing the high ground for 'recreation'. It is therefore recommended that a strategy be put in place to reduce the opportunities for vehicle access, improving enforcement of the law and changing attitudes towards the use of motorised vehicles in the mountains. This work needs to be implemented before any habitat restoration or path repairs are undertaken otherwise these investments are likely to be compromised.

It is beyond the scope of this study to develop the strategy, but it will involve working with landowners, NPWS, the Garda and possibly local schools and social clubs. It is recognised that unauthorised motorised access is a problem in many Irish mountain areas and sharing experiences from other places may be helpful.

6.5 INVESTIGATE CAR PARKING PROVISION

Provision of car parking is an important part of visitor management and careful consideration needs to be given to how and where space is provided. At present there is no accurate information that can be used to estimate required car parking capacity and no strategic view on the provision of car parking. It is recommended that automatic vehicle counters are installed at the main access points (for at least three months in the summer) to measure traffic volume and these could be compared with visitor numbers (see section 6.9) to determine the appropriate capacity. Car parks should not be built to cope with the busiest day, but can be sized according to average summer use (using the mean or mode plus the variance would be a useful estimate of capacity).

The location of car parks also needs to be investigated as part of the wider visitor management issue. It is unclear whether there may be opportunities to encourage people away from existing informal parking areas to provide more secure car parking. The Black Road car park should be addressed as a matter of priority as its relatively high altitude and short distance from the summit makes it very popular.

6.6 UNDERTAKE SELECTIVE PATH REPAIR

The condition of routes in the Galtees and the current level of walker pressure would favour an 'Early Intervention' approach to path repair and this is recommended. Rather than wait for damage to become extreme and require large scale repairs, the overall impact of walkers can be reduced more effectively by selective work to define a preferred line and protect the surrounding habitat. The objective of this work would be to prevent further damage rather than develop and improve access.

In some cases there are approach routes that use existing tracks that would benefit from repair and maintenance. Any work done on these routes must be done with care so that access is not improved to allow motorised vehicles to use the routes, or as a means to encourage tourism – the negative impacts on sensitive habitats could be significant and increased use of the Galtees by poorly prepared walkers has safety implications.

It is not considered viable or proportionate to construct high altitude paths through deep peat in the Galtees as this would require extensive use of excavators and the 'cost per user' would be likely to be very high. Therefore it is not recommended to develop routes that have extensive sections on deep peat or to tackle short sections of damage that are entirely on peat (where a path would need to be 'floated' on geotextile).

6.6.1 THE BLACK ROAD

The Black Road is potentially the key to managing pressure on Galtymore and the other peaks as it provides a direct route to the main col, with a short walk in, from an established parking area (which is promoted by the sign on the R639). Improvement of this track and development of a constructed path to the col would have a significant and detrimental impact on the Galtees – it would provide easier access to the summit on a route that is already popular with 'casual' walkers (as observed during the survey). It would also greatly change the visitor experience making it a more sanitised route, and would have a large landscape impact, extending a 'ribbon of gravel' towards the summit.

Although it is slightly counter-intuitive to the aim of reducing impact of walkers, the development of a fully constructed path along this route would also have a negative impact on the rest of the mountain range, where it is not viable to construct a robust path. Likewise, way marking a route from the track-end to the col is not a solution as it would concentrate walkers onto a single unsustainable line, which would be likely to intensify the localised damage beyond where it can recover and increase the temptation to build a path. Way marking at this location also goes against the guidelines of the National Trails Office. The spread of walkers over this area does mean that there is damage to vegetation and localised bare peat. However, this appears to be self limiting as people avoid the worst areas, allowing them to recover naturally, but with people still heading in the same general direction. Therefore it is recommended that this area be left as a natural barrier to casual walkers and act as a 'sacrificial' habitat zone in order to protect the wider mountain area. There is unlikely to be a 'net loss' of functioning habitat and there may be a 'net gain' if other works are progressed.

Any repairs to the existing constructed part of the Black Road should take account of the potential consequences of 'improving access' and the objective should be limited to helping walkers to stay on the robust line of the track. If possible a padlock should be put on the upper field-gate, with a pedestrian gate installed beside it (kissing-gate or self-closing). Relevant shareholders would need keys to allow legitimate land management activities, but the lock would discourage unauthorised motorised vehicles from using this route for 'recreation'.

6.7 INVESTIGATE HABITAT RESTORATION AND CARBON STORAGE POTENTIAL

The damaged blanket bogs around the cols of Galtymore have the potential for restoration to functioning habitats, contributing (modestly) to carbon storage and meeting the objectives of the European Habitats Directive. The techniques, as outlined in Section 5.4, would need to be carefully implemented in accordance with regulations and guidance from NPWS. This work goes beyond path repair as not all of the damage can be attributed to walkers, but it would be advantageous for it to form part of the overall objectives of managing the Galtees. This potentially opens opportunities for different funding sources and takes a more 'joined-up' approach.

Landscaping and habitat restoration will also be required around the selective path repairs to disguise existing damage and to minimise the potential for future damage. It is common to 'borrow' turfs from one area to help establishment and disguise existing damage. However, in some areas the damage zone is extensive enough to require additional plants to cover the bare peat, using locally sources species.

It is likely that habitat restoration works would take a number of years to become established and would be partly dependent on prevailing weather conditions for success. Any planting / seeding should be done early in the growing season to increase the potential for success, and supplementary planting / seeding may be required in subsequent years. Any stabilisation of peat banks needs to be done using biodegradable materials so that once their functional life is complete there is no requirement for waste removal.

It may be necessary to exclude sheep from some areas whilst the vegetation establishes. The areas likely to be under pressure from sheep are the sheltered peat banks so are relatively limited in extent, and this is probably best done through temporary electric fencing. The stocking densities already need to be managed in accordance with maintaining favourable status of the designated habitats within the SAC, so habitat restoration works should have no overall impact on grazing capacity of the Galtees.

6.8 BUILD PATH MANAGEMENT CAPACITY

Ireland does not have an established upland path 'industry' and there are no known specialist contractors currently operating in the country that could deliver the recommendations of this report. It would be possible to import skilled workers from, for example the United Kingdom, and restore the damage on the Galtees, although this may not be seen as desirable. It may be possible to undertake some maintenance using existing skills base, but it would be necessary to bring in expertise for any significant repairs that may be required over time.

It is recommended that a programme of specialist training be developed to generate a pool of workers with the aptitude and skills to sensitively repair and restore mountain paths using established Early Intervention techniques that are adapted to the local conditions. This training programme is likely to differ from the existing path training courses operated in Scotland, which tend to focus more on full construction rather than minimum or early intervention (in response to the greater scale of damage in Scottish hills). The skills and techniques required to repair paths through Early Intervention are also well suited to delivering ongoing maintenance. The training course would need to be run a number of times in order to generate a numbers of workers and ensure continuity of supply of skilled labour for path management. This would also help to justify the investment in developing a course, and potentially allows early participants to set up contracting businesses that will generate demand for appropriately skilled workers.

Although in the short term the cost of training people to deliver path management in the Galtees is likely to be higher compared with solely using imported contractors, there are a range of reasons why it may be desirable to take this approach. Developing the skills locally would mean that they could be applied to other sites with similar issues requiring Early Intervention, potentially securing the long term sustainability of mountain paths in Ireland. There are also social and economic benefits to using a locally based workforce. However, it must be recognised that path work involves continuous outdoor exposure and manual labour and therefore requires highly motivated individuals who are comfortable in this environment – a training scheme that is aimed solely at those who are currently out of work may not recruit enough people who are well suited to this potential career. This may mean that existing 'training for work' schemes would be difficult to adapt to this specialist industry and access to funds could be more difficult if there are specific requirements for participants.

6.8.1 COURSE CONTENT

There is no 'off-the-shelf' option for delivering a training course, particularly one focussing on early intervention and upland habitat restoration so it will be necessary to undertake some development work to identify the range of practical techniques and background knowledge that need to be delivered. This research should include the key areas of skills and knowledge that are directly relevant to people who would start a career helping to manage mountain paths, and there may be merit in developing a vocational qualification to increase the value of the training. As well as these 'rural-environmental' skills, additional aspects of career development may be useful to include, such as business development, contract management and procurement. A course would need to run for a minimum of four months, with a mixture of active learning, and developing background knowledge (including for example, Health and Safety issues, ecology and recreation management). A large part of the course would involve practical work on site to hone the skills and allow the theoretical aspects of the course to integrate with hands-on practice. Based on experience from other path training courses a group size of six to eight would be optimal and it could be run on consecutive years to build the capacity to establish a 'path management industry'. If possible, a course duration of six- or eight-months would provide a good balance between learning new skills and consolidation of them on site.

6.8.2 REAL-WORLD TRAINING SITES

The selection of a range of work sites on the Galtees could be used to introduce trainees to path management techniques in less sensitive areas and then move to the higher ground once some of the techniques have been practiced. The constructed part of the Black Road, for example, has a range of existing features that need to be tackled and the desire line near the col would provide a useful training site in the more specialist skills.

Main approach track: repair of existing drainage features; de-roughening of the surface and blocking of braids.

Top end of track (by peat cuttings): line definition; close down of braids and landscaping.

Near the col: line definition; habitat restoration trial

The ice road on Lough Curra and the access track to Lough Muskry also offer potential work sites to repair damaged paths at lower altitude and in less sensitive habitats than the ridge. These sites could be used as training opportunities within the first course or subsequent years.

Cush also has a range of problems that need to be tackled, some of which would give an opportunity for training. However, it is important to recognise the work being done by Mountain Meitheal at the start of the path, following extensive negotiation with the landowner and NPWS. Therefore any proposed training sites on Cush should be respectful of the work of volunteers and carefully selected to avoid potential duplication of effort.

6.8.3 POST TRAINING OPPORTUNITIES

Following the training course it may be possible to engage the trainees to continue work on the Galtees either on an employed or contract basis. It is recognised that there may not be 100% take-up from the trainees and not all may turn out to be suitable for such a role. Additional support might be required after the course, particularly in the first year, if any wish to develop contracting businesses but this potential could form part of the selection criteria, to train a group that have a range of previous experience to bring to this field. In subsequent years it is possible that there will be an emerging path management industry for new trainees to graduate into.

It may be appropriate to share resources with other areas to benefit from economies of scale and to secure employment opportunities in the long term. Establishment of an overarching body covering a wider area, for example, may help to ensure that a more consistent approach to Upland Pathwork is taken, and it is recommended that this option also be investigated.

6.9 UNDERTAKE MONITORING AND MAINTENANCE

Some of the routes in the Galtees do not currently require repair, but it is important to take advantage of the baseline survey to monitor whether there are any changes on these routes over time. The purpose of the monitoring would be to determine whether to undertake Early Intervention works to slow or reverse any deterioration of condition. This type of monitoring, repeating the Amber Survey method, is usefully done on a three- or six-year cycle depending on the perceived rate of change / deterioration. Experience from elsewhere shows that more frequent monitoring of unmanaged paths does not yield worthwhile data.

As well as monitoring the impacts of visitors, it is important to build up a picture of the pressure on the hills (i.e. how many people and when). Automatic counters can be used to record visitors using an electronic beam or a pressure pad, depending on the location. From the survey there are three key points where beam counters could be used and one or two locations that could be used with pad counters. It is recommended that beam counters are installed as soon as possible, and for pad counters to be installed as part of the Early Intervention works.

[map of potential counter locations]

For paths that undergo Early Intervention, repair and restoration phase is only part of the solution. If these paths are not adequately maintained it is very likely that another cycle of deterioration will begin and the investment will be compromised. Early Intervention techniques are likely to require more frequent and potentially more extensive maintenance than Full Construction, but Full Construction is not considered to be appropriate to the location or a viable option. Experience from other mountain areas shows that lack of maintenance is the biggest cause of path failure, and that appropriate maintenance is required to help ensure that paths can be resilient to the predicted effects of climate change (Walking-the-Talk, 2011).

An important decision-making tool for path maintenance is monitoring data, allowing limited resources to be targeted. This can be done using professional staff / contractors or with a combination of trained individuals (e.g. volunteers) inspecting the path on a frequent basis and a competent person to assess the outcomes of the inspections. An example of volunteer engagement can be seen at www.outdoorcairngorms.co.uk. Fixed point photography is probably the most useful means of capturing path condition information, although this does not have

to be done with the same precision as time-lapse photography – GPS locations and orientation data would be sufficient to generate high quality monitoring images. The images should include areas of habitat remediation as well as the path itself. This monitoring is less onerous than the full Amber Survey method for detecting change in unmanaged routes.

An inspection regime will ensure that minor problems are identified and rectified early, and should be a cost effective way of targeting the maintenance resource. This could include early identification of off-path activity and remedial works to retain people on the preferred lines. Those involved with inspections could also be trained to undertake minor tasks (such as clearing debris from built drainage features) so that developing issues are intercepted before they have a negative impact on the path. Care needs to be taken to ensure that volunteers are appropriately trained and understand both the Galtees Vision and the objectives for maintenance. Complex repair tasks should not be undertaken without skilled supervision.

The use of the Early Intervention approach combines repair and maintenance into ongoing management of the mountain paths and over time, the time required will diminish to concentrate on maintenance of sections that have been repaired. Maintenance is therefore an integral part of the investment and a commitment must be made.

One of the key challenges in the 'Maintenance Phase' is retention of skills and capacity within the local area. Use of unskilled labour, or inappropriately trained people can have long-term negative impacts for upland paths and should be avoided, however tempting it may appear. There may be regular volunteers, such as those involved in Mountain Meitheal, who may wish to get involved in maintenance of the upland paths and opportunities could be sought to work collaboratively between the local group and professional path workers to maximise the skilled labour availability. It is important that volunteer input is appropriately valued and viewed as a bonus, as it may not be possible to respond to the variability of maintenance needs – full reliance on voluntary input can place the investment at risk.

Funding for maintenance is a common issue and it may be appropriate to seek contributions from walkers towards the maintenance of paths. Alternatively businesses that benefit directly from the Galtees, or use them as part of their promotional material could be approached to contribute to their care.

6.10 DELIVER AWARENESS-RAISING ACTIVITIES

Raising awareness of the recreational impacts and management of the Galtee Mountains needs to be targeted at visitors when they arrive at in the local area and, perhaps more importantly, before they make plans to climb the mountains. They are therefore an integral part of managing recreation in the mountains, rather than an optional extra. The objective is help people to understand the special qualities of the Galtee Mountains and to encourage them to change behaviour in order to reduce the pressure on sensitive parts of the mountains.

These activities should be enshrined within the Vision for the Galtees, with commitments from different organisations to undertake relevant activities, and need to be integrated within existing and future communication programmes and initiatives, rather than seen as a short term effort.

6.10.1 CLEAR CONSISTENT MESSAGES

The most important aspect of communication about the Galtee Mountains is the use of consistent messages about caring for the mountains and recreational activity. The communication will be required across a broad spectrum of media and will need to be sustained in order to encourage behavioural change among visitors. Registration of a relevant website domain is recommended and a site developed to communicate about the sustainable management of recreation on the Galtee Mountains and the expected behaviour of visitors.

Key messages (across all types of media) would include, for example:

- The commonage areas of the Galtee Mountains are a sensitive environment and can be damaged through careless behaviour;
- The land is privately or collectively owned and is managed for grazing.
- There is a long term commitment to managing the recreational use of the Galtee Mountains;

- It is expensive to manage recreation in the Galtees and contributions are welcome;
- Large groups can have a bigger impact than small ones;
- There are alternative recreation opportunities that would have lower impact on the environment;
- Recreational use of motorised vehicles is illegal and will be prosecuted.

Communication activities also need to consider how to influence 'opinion formers'. For example, website managers should be encouraged to adapt their content to be consistent with the sustainable management of the paths, and potentially link to an 'official' Galtee Mountains website. Event organisers must be made aware of the potential impact of their activities and where groups continue to visit, the group leaders need to be encouraged to take account of recreation management efforts.

6.10.2 ORGANISED EVENTS

At present the routes to Galtymore are not sufficiently robust to cope with additional high volumes of visitors in concentrated periods caused by organised events, and it is questionable whether the level of construction that would be necessary to cope with such demands is reasonable or desirable. Whilst the majority of Galtymore Summit events are organised to raise money for worthy causes, there does not appear to be any consideration of the impacts of these events, and the subsequent costs for repairing damage resulting from the event. This may need to be part of a wider programme of awareness-raising in Irish society about the implications of large charity events, but it is an important aspect of the long term management of the Galtee Mountains that needs to be addressed as an integral part of the restoration programme.

The organised 'Galtee Crossing' events also need to take account of the potential impact they have. Reducing the pressure on a single route on a specific day would help to minimise the amount of damage, and this could include changing the date or planned route if ground conditions are poor. It is assumed that the majority of those taking part in an organised Crossing have some interest in the mountains, and therefore may be more understanding than the general public of the need to adapt behaviour to minimise their impact.

6.11 PRIORITISE IMPLEMENTATION

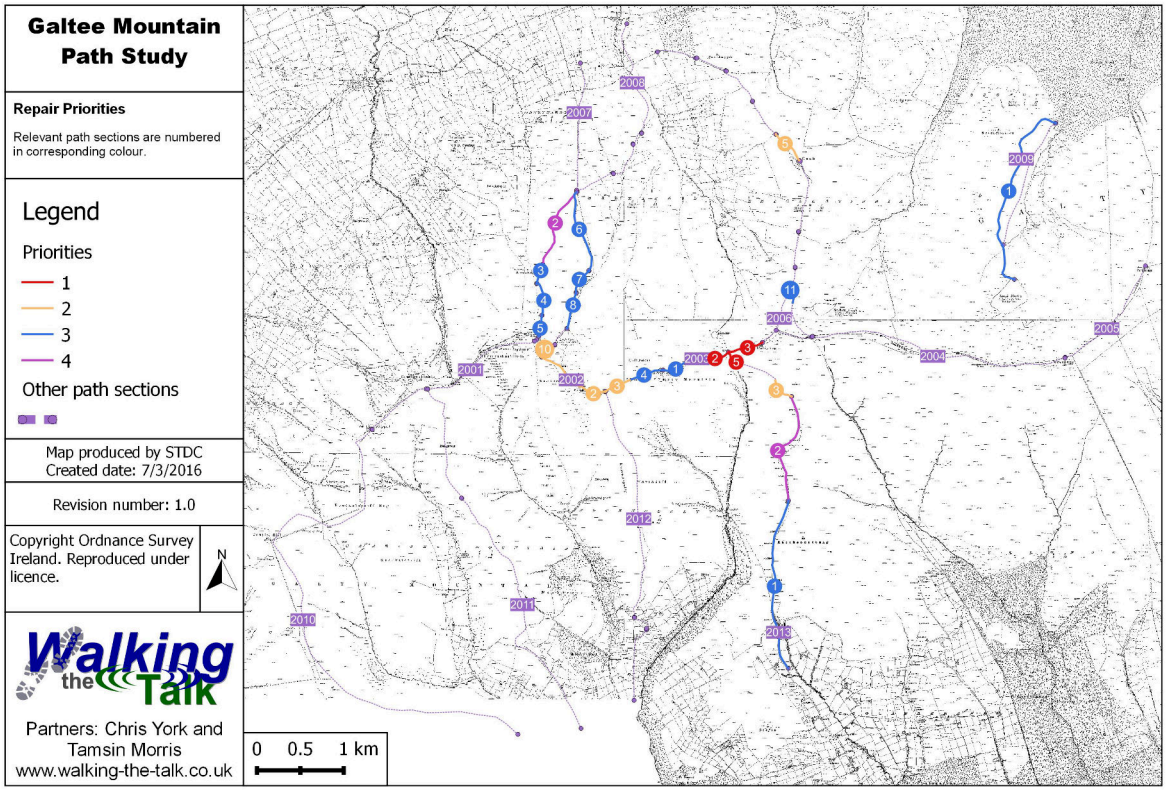
If competent contractors were available, it would be reasonable to implement Early Intervention works on both sides of Galtymore and then move to less damaged areas. However, using the Galtees as a live training site may justify taking a different approach: establish the skills and credibility of trained path workers on less sensitive areas such as the Black Road and Cush before working on the most visible routes. The 'graduate' trainees could then be engaged to work on other paths, prioritised as follows:

- Galtymore to Galtybeg
- Slievecushnabinnia to Galtymore (from Galtymore west as far as the col)
- Cush (the col between Cush and Galtybeg)
- Knocknanuss
- Loch Curra
- Loch Muskry

Peatland restoration work could include:

- Galtymore cols
- Lyracappul to Slievecushnabinnia
- Greenane
- Knocknaterriff

Early consideration of removing way marking to Loch Curra and Loch Muskry is also recommended.


Galtee Mountain Path Study
Repair Priorities
Relevant path sections are numbered in corresponding colour.
Legend
Priorities
1
2
3
4
Other path sections
Map produced by STDC
Created date: 7/3/2016
Revision number: 1.0
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Walking the Talk
Partners: Chris York and Tamsin Morris
www.walking-the-talk.co.uk
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7 COSTS

The potential costs of implementing the recommendations are complex to determine and are partly dependent on strategic choices about how the work might be implemented and the scope of habitat restoration that could be included. Costs have been calculated for two different delivery mechanisms as a means of facilitating a transparent and informed decision making process.

7.1 CONTRACTOR DELIVERED REPAIRS

As highlighted in section 6.8 a ready supply of contractors is not available within Ireland but if the repairs were to be let as contracts the following priorities are recommended. These budgeted costs include an allowance for detailed design specification and site supervision by appropriately experienced independent contractor(s). It may not be possible to secure contractors at this rate if, for example, they are non-resident and are affected by currency fluctuations.

Path	Section	Priority	Length (m)	Budget
Galtymore to Galtybeg	*3*	*1*	*413*	*€33,400*
Galtymore to Galtybeg	*2*	*1*	*484*	*€39,000*
Black road	5	1	167	€13,600
Galtymore to Galtybeg	1	1	55	€2,800
Black road	*3*	*2*	*343*	*€16,600*
Lough Curra	10	2	42	€3,300
Cush	5	2	414	€39,900
Slievecushnabinnia to Galtymore	*3*	*2*	*337*	*€21,700*
Slievecushnabinnia to Galtymore	2	3	900	€43,500
Cush	11	3	157	€12,800
Knocknanuss	3	3	233	€15,000
Knocknanuss	4	3	403	€13,000
Knocknanuss	5	3	244	€7,900
Lough Curra	7	3	320	€15,400
Lough Curra	8	3	434	€14,000
Slievecushnabinnia to Galtymore	4	3	384	€12,400
Galtymore to Galtybeg	1	3	294	€19,000
Knocknanuss	2	3	986	€47,600
Black road	*1*	*4*	*2,020*	*€32,500*
Black road	*2*	*4*	*1,359*	*€21,900*
Lough Curra	*6*	*4*	*972*	*€15,600*
Lough Muskry	1	4	2303	€74,200

The total cost of using contractors is estimated at €515,000 which could be implemented over four years (c€130,000 per annum).

7.1.1 OFFSETTING CONTRACTOR COSTS

Path sections that are highlighted in italics could potentially be delivered using trainees, and the transfer of these budget costs to implementation of a training programme would reduce the contractor costs by approximately €174,000. The remaining cost of Early Intervention works is estimated at €341,000.

7.2 TRAINING

The cost of developing the training programme is estimated at €5,000 which could be let as a contract or developed in-house with some specialist support. This would not include the development of an accredited vocational qualification, although it would be possible to identify the options for such a scheme.

Delivery of the training has some significant unknowns and there may be opportunities to tap into other training schemes to offset costs. The costs are based on the following assumptions that:

- Permissions to undertake path repairs on the identified routes can be negotiated in advance of the course starting;
- There will be six trainees and the course will run on two occasions (nominally year 1 and 2);
- The course will last for 30 weeks;
- There is a 'host organisation' that can deal with administration of the course and act as an employer for staff and the trainees – a nominal overhead of 7% has been included;
- Trainee salaries have been calculated using the minimum wage (€9.15 per hour from 2016);
- Although it may be legal to pay less than the minimum wage to trainees this may not be desirable if high quality candidates are to be attracted, who can then graduate to running contracts in future;
- The cost of vehicle hire (e.g. minibus) or travelling expenses for staff have not been included;
- The training programme will be recognised nationally as transferrable to give graduates of the programme the best chance of finding sustainable employment.

The following costs have been estimated:

	Year 1	year 2
Training Officer Salary (34 weeks)	€22,820	€23,500
Training Officer PPE	€420	€430
Training Officer - employer on costs	€7,990	€8,230
External trainers - first aid, excavator use, Mtn Awareness etc)	€7,000	€7,210
Trainees Allowance (30 weeks)	€89,000	€91,670
Trainees PPE	€2,520	€2,600
Purchase of Equipment	€2,100	
Equipment Repair	€420	€860
Subtotal	€132,270	€134,500
Overheads @7% (office, management etc)	€9,260	€9,420
TOTAL	€141,530	€143,920
		€285,450

There is an additional cost of approximately €116,000 for using a training programme compared with simply buying-in contractors. This is 23% higher, but potentially provides Ireland with a pool of skilled path workers. However, the implementation of this option is likely to provide additional funding opportunities that may not be available using the 'one-off' approach of using contractors as a short term-fix.

7.3 MAINTENANCE

An annual working budget of €20,000 should be identified at the outset, and a portion of this needs to be transferrable across financial years to account for the potential variance in work requirements that cannot be predicted easily. This budget would cover the cost of skilled labour to undertake maintenance tasks and could contribute towards the cost of training and supporting volunteers to monitor the path once repaired.

8 NEXT STEPS

There are a range of issues that need to be taken forward to progress the restoration of recreational damage to the Galtee Mountains and there may be competing priorities for action that need to be addressed.

- Draw together stakeholders to establish a mountain forum or partnership
- Develop a shared Vision for the Galtee Mountains
- Investigate training and skills development opportunities
- Develop a training programme focussing on Early Intervention techniques
- Develop a communications strategy
- Apply to relevant funding agencies
- Implement a training programme using the Galtees as a 'live training site'
- Deliver communication activities
- Implement a programme of Early Intervention repairs
- Implement an ongoing programme of maintenance

9 REFERENCES

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